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What is a Closed System?

by James Hyder

Since my article on laser projection systems in the May-June issue of *LF Examiner* appeared, it has come to my attention that some people in the GS world are not clear about the nature of the proprietary IMAX digital formats, and that my characterization of them as "closed" may have led to some misunderstandings. Although I have described these points in previous issues, I should not have assumed that all readers remember all the details, and so I will repeat them here (and periodically in the future) so that there is as little confusion and misunderstanding as possible.

In the article I was slightly careless in my characterization of the IMAX digital projection systems. I wrote "As with the first-gen IMAX digital system, **Imax Corp**. will determine which films are made available in its proprietary laser digital format, and producers who wish to book their films in IMAX laser theaters will have to pay Imax

*(see **CLOSED** on page 2)*

Inside *LF Examiner*

Open vs. Closed: Quick Facts	3
The Biz: News, Personnel	4–5
Premiering This Summer	9
GSCA Conference Schedule	11
In Production	12–13
Lasers in Digital Cinema Projectors	**14**
Worldwide LF Theater Inventory	16
Bookings Data	17–21
Directory	22–23
Classified Ads	23
Shorts	24

Shedding Light on Going Dark

Upgrading GS Theaters 101

by John Lewis

With the recent major advances in digital projection technology and the systematic decline of film-based content, more and more theaters are facing the necessity of upgrading their equipment to include the latest technology. There has been much discussion about the economics of converting existing theaters from film to digital, or from xenon lamps to lasers.

Each theater has its own unique set of circumstances and considerations, with differing casts of potential players. Yet once the decision has been made to upgrade a theater's projection and audio systems, it falls upon the theater managers and project managers to make the dream a working reality. If you are in charge of making this happen, you may be asking yourself: Where do I start? What do I need? Am I out of my mind, trying to tackle this myself?

Throughout my career I have worn many hats on different sides of this equation; as theater manager, project manager, technical supervisor, and most recently as a freelance consultant. For this article I've assembled an assortment of boots-on-the-ground points to consider when approaching this seemingly monumental task.

Your basic theater upgrade requires removing the existing projector(s), screen, and sound system and replacing them with new equipment. In the auditorium this includes removing and replacing all of the existing speakers and the screen. In the booth this may require adding addi-

*(see **UPGRADING** on page 6)*

GSCA 2015 Preview

The **Giant Screen Cinema Association** will hold its annual conference and trade show in San Francisco, Sept. 9–11, with a Dome Day in San Jose on Sept. 12. About 400 people are expected to attend the meeting, which will include screenings of nine new films (including several rough cuts and fine cuts), 19 films in production, and 27 films in development. Professional development sessions will cover marketing, ancillary educational materials, and technology trends.

Screenings will be held at the **AMC Metreon 16** in downtown San Francisco, a 16-year-old IMAX GT 3D theater with the second-largest screen in North America (after AMC's **Lincoln Square IMAX** in New York City): 76x98 feet (23x30 meters). Although neither AMC nor the GSCA has officially announced it yet, an IMAX laser digital projection system should be installed by the time of the conference, making this the first industry meeting to use a production-unit laser system for all digital screenings.

The theater's IMAX 3D 15/70 film projector will remain in place and be used to screen 15/70 prints of several new films and clips from films in production.

The conference hotel, the **Parc 55**, is an eight-minute walk from Metreon, a four-story shopping center opened in 1999 as a brand showcase by **Sony**, which then owned the Loews theater chain.

*(see **GSCA** on page 10)*

Premiering This Summer

Terminator Genisys
Ant-Man
Pixels
Mission: Impossible – Rogue Nation
The Man From U.N.C.L.E.

See page 9.

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What Is a Closed Projection System?

*(from **CLOSED** on page 1)*
to convert them."

Although this is technically true, I should have said that Imax "will determine which *Hollywood* films are made available" in the IMAX digital formats, and that *giant-screen* producers will have to pay Imax to convert their films to the format.

So what do I mean when I say that IMAX digital is a "closed" system? First, some history.

The DCI spec

For all practical purposes, the current age of digital cinema began with the release of the first DCI specification in July 2005. **Digital Cinema Initiatives, LLC**, had been established in 2002 by seven major Hollywood studios with the purpose of establishing "voluntary specifications for an **open architecture** for digital cinema that ensures a uniform and high level of technical performance, reliability and quality control." [*Emphasis added.*] The need for such a spec arose from the morass of proprietary, non-compatible, and non-interoperable digital and electronic cinema systems that had been introduced in the previous decade, as it began to be technically feasible to replace film projectors with digital.

The multitude of pre-DCI digital formats varied in image quality and copy protection schemes, and if allowed to proliferate, would have required distributors to maintain an enormous inventory of incompatible formats. The situation was similar to the variety of proprietary and incompatible theatrical digital audio systems that had arisen in the 1980s and 1990s: **Dolby**, **DTS**, **Sony** SDDS, etc.

The motion picture industry, in the form of seven studios — **Metro-Goldwyn-Mayer**, **Paramount Pictures**, **Sony Pictures Entertainment**, **Twentieth Century Fox**, **Universal Pictures**, the **Walt Disney Company**, and **Warner Bros.** — acted to avert an expensive and unproductive format war by establishing a standard for digital cinema projection that would ensure that image quality would be as good as or better than that of 35mm film (a key requirement for directors, cinematographers, and other members of the creative guilds). Another critical requirement was that the system have robust encryption that would prevent piracy.

And finally, and most importantly for the present discussion, the system would include no proprietary intellectual property. That is, it would not contain any hardware or software that was controlled by a single entity. The JPEG 2000 image compression standard, the PCM/WAV audio format, and the encryption algorithms used are all open standards, available to any hardware manufacturer, producer, distributor, or post house, without restriction.

As a result, any producer or distributor can take a digital master of a film to any post-production house and get a digital version (a digital cinema package, or DCP) that will play on any DCI-compliant projector in the world.

This is analogous to the pre-digital world of distributing film prints, both 35mm and 15/70. The 15/70 film format was invented by Imax Corporation, and although key aspects of its rolling loop projector were patented until the early 1990s, GS filmmakers were never required to use IMAX cameras or the services of Imax's **DKP/70mm Inc.** post-production subsidiary to make or release their films. In the early days most did, but other companies, such as **RPG Productions** and **Fotokem** (to mention two that are still in business) offered GS services to producers who chose not to work with Imax. Their films could be shown in all IMAX theaters with no involvement of Imax Coporation, just as all Hollywood producers could run their 35mm prints in all movie theaters around the world.

IMAX digital formats

With the introduction of its first digital projection system in 2008, Imax broke that pattern. The company's digital system uses two DCI-compliant projectors (first manufactured by **Christie, Inc.**, later by **Barco**) modified with various patented technologies intended to improve image quality, specifi-

Corrections

The article on laser systems at CinemaCon in the May-June issue contained some minor misstatements about Dolby Cinema. Dolby's deal with AMC Entertainment for up to 100 Dolby Cinema at AMC Prime locations extends through 2024, not 2020. The El Capitan theater in Los Angeles was converted to Dolby Vision projection and Dolby Atmos sound in May, but is not one of the three Dolby Cinema locations that opened that month. (As we explained in the article, Dolby Cinema entails significant modifications to the auditorium's entrance and interior fittings and décor, beyond the projection and sound systems.)

Also, the characterization of the role Imax Corporation plays in selecting which films are made available in its proprietary IMAX digital format was unclear. That issue is addressed in the article "What is a Closed System," starting on page 1.

cally contrast and "perceived resolution." The use of two projectors, where virtually all other digital installations used only one, naturally doubled the brightness of the IMAX digital image compared to a standard digital system.

Although it might have been technically feasible to develop a system that would enhance the image quality of standard DCI-compliant DCPs at the time of projection, Imax opted to require proprietary advance processing of films that are presented on its system as "the IMAX Experience." In addition to the other enhancements, Imax's mastering process also reconfigures the depth mapping of 3D films in a manner more suitable to IMAX screens. Company executives say that these steps ensure that high quality levels are maintained.

Thus, any producer who wants to show a film in the full brightness and enhanced quality of "the IMAX Experience" must go to Imax Corporation to have it processed into the proprietary IMAX digital format. No other post house can do this. It is a monopoly held by Imax.

The IMAX digital system is only DCI-compliant in a limited fashion. Specifically, it can show standard DCI-compliant films in 2D, but they will be projected by only one of the two projectors (IMAX-formatted 2D films are shown through both) and the system will automatically play a visual and audio message before each show announcing that "This presentation is NOT the IMAX Experience." This message cannot be disabled by the theater operator.

The IMAX laser system in the Boeing IMAX Theatre at Seattle's Pacific Science Center.

And 3D DCI-compliant films cannot be shown on an IMAX digital system.

Although there are many technical differences between the first-gen IMAX digital system and its new laser-based system, and the laser system has a new digital format that provides for the tall 1.43:1 aspect ratio of 15/70 film, for the purposes of this discussion, the preceding section applies to both IMAX digital formats. Both are similarly proprietary.

What does "closed" mean?

After my article comparing the various laser systems was published, I learned that some in the giant-screen business have misinterpreted the meaning of "closed" (or "not open") in this context. In particular, a few people apparently thought it meant that films by producers other than Imax were not available in the IMAX format at all, or that Imax Corporation decided which outside films would and would not be converted.

Of course, this last point is true with respect to DMR films. Imax does make the final decisions about which of the hundreds of Hollywood releases each year appear on the world's multiplex IMAX screens.

To the best of our knowledge, Imax has not refused to convert any films by independent GS filmmakers to the IMAX digital format (with one exception). However, as we reported at the time, in the early days it threatened to do so. In his announcement of the digital system at the 2008 **Giant Screen Cinema Association** conference, Imax CEO **Richard Gelfond** said the company would convert independent films as long they were less than 60 minutes, and at least 70% of the footage had been shot on 70mm film. (*See LF Examiner, October 2008.*)

At least one film, **National Geographic**'s ***U2 3D***, released in 2008, was never shown in IMAX digital theaters because of these restrictions: it ran 85 minutes and was shot entirely with digital 3D cameras.

Gelfond also said in 2008 that the cost to distributors of conversion would be "minimal." However, a year later, the company announced that, in addition to a mastering fee of about $50,000 per program hour, digital prints in the IMAX format would cost about $5,000 each. This was far above the roughly $3,000 for

*(see **CLOSED** on page 16)*

Open vs. Closed: Quick Facts

- The DCI Spec is an open standard that provides for universal interoperability of digital films and projectors.
- Any producer can have a DCI-compliant digital print (DCP) made by any post house at a minimal cost.
- IMAX digital is a proprietary version of the DCI spec, controlled exclusively by Imax Corporation.
- Only Imax can produce a digital print in the proprietary IMAX digital format.
- Most independent producers make their GS films available in the open DCI format.
- Most independent producers also have their GS films converted to the proprietary IMAX digital format.
- IMAX digital theaters can play non-IMAX content in 2D, although at reduced light levels.
- IMAX digital theaters cannot play non-IMAX content in 3D.
- Imax Corporation does not make the films it produces or distributes available in non-IMAX digital formats.

Imax reports $24M Q2 profit

For the second quarter ending June 30, 2015, **Imax Corporation** reported a profit (attributable to common shareholders) of $24.4 million ($0.34 per share) on revenues of $107.2 million, compared to a profit of $13.3 million ($0.19 per share) on revenues of $79.1 million in the second quarter of 2014. For the first six months of 2015, the company posted a profit of $24.7 million ($0.34 per share) on revenues of $169.4 million, compared to a profit of $13.9 million ($0.20 per share) on revenues of $127.3 million in the same period last year.

Imax signed deals for 28 new theaters and two upgrades (both to laser systems) in the first quarter, compared to 20 new theaters and four upgrades in the second quarter of 2014. It installed a total of 35 theaters (no upgrades) in this year's Q2, compared to 30 new installs and four upgrades in the same period last year. Backlog stands at 391 systems (24 of which are upgrades) as of June 30, 2015, compared to 419 (22 upgrades) a year ago.

The world total of IMAX theaters as of the end of June was 976, of which 852 are in multiplexes. At the same time in 2014, the total was 868, with 735 in multiplexes.

In a conference call with investors, CEO **Richard Gelfond** reported that the successes of ***Jurassic World***, ***Avengers: Age of Ultron***, and ***Furious 7*** had provided for three consecutive months of IMAX box office over $100 million, "for the first time in our history." The company has filed for an IPO of shares of IMAX China on the Hong Kong Stock Exchange, and Gelfond said that the turmoil in the markets of mainland China "has not altered our plans."

He said that the quarter saw the openings of the first commercial theater in Denmark and the first IMAX theaters in Vietnam and Slovakia. The company has increased its "targeted global zones" for IMAX theaters from 1,700 to 2,450. "Almost 2,000 of these zones are earmarked for international locations. With 482 international commercial theaters currently installed, we are only 25% penetrated in the international markets, so we still have a long way for runway for growth in front of us."

Imax signs three more laser deals

Imax Corporation has signed deals with three museum theaters to upgrade their IMAX film projectors to the next-gen IMAX digital projection system with lasers. **Science North** in Sudbury, ON, Canada; the **Tennesee Aquarium** in Chattanooga; and the **Auto and Technik Museum** in Sinsheim, Germany will all be converted to the new system within the next six months. All of the theaters will replace their existing GT 3D 15/70 film projectors with Imax's 4K dual-projector laser system, along with new silver screens and the new IMAX 12-channel sound system. As it happens, none of the three need to replace their seats or carpeting during the closures.

Auto and Technik Museum in Sinsheim, Germany.

The **La Salle IMAX Theatre** at Science North opened in 1994 with an IMAX GT 2D projector, and upgraded to 3D in 2009. It seats 200 and has a screen that is 57 feet by 73 feet (16 by 21 meters). According to the museum's **Brenda Tremblay**, it will close for conversion from Sept. 8 to Oct. 7.

The Tennessee Aquarium's theater will close for four weeks, starting on Jan. 4, 2016. **Gordon Stalans** tells *LFX* that "Early in the process we decided to wait on laser technology because our opinion was that xenon digital systems did not meet the presentation standard we had set with 15/70 film. We had also decided that the 4:3 aspect ratio was important to us. We see that as one of the important differentiators between us and the ever-growing multiplex screens available to consumers. Imax was the only provider that had proven to us that their system can fill a 4:3 screen our size with a high-quality image." The aquarium's theater opened in 1996 and has an 69x87-foot (21x27-meter) screen and 291 seats.

Sinsheim's IMAX 3D theater opened in 1996 with a 350-seat auditorium and a 59x81-foot (18x25-meter) screen. According to theater manager **Michael Einkörn**, the theater will close for the conversion on Jan. 11, 2016, and he expects to reopen in four to six weeks. He is looking into a possible innovation: "install[ing] a heat pump to produce hot water for the glasses cleaning machine with the heat from the laser. We are currently calculating if this will work. This would save energy and will have a good effect on the environment."

To date, Imax has signed or installed laser systems in 11 museum theaters and more than 60 commercial theaters.

Audubon Aquarium drops IMAX

The **Audubon Aquarium** in New Orleans, LA, will convert the **Entergy IMAX Theatre** from IMAX 15/70 film to digital projection with two 4K **Christie** projectors this fall. The ten-year-old GT 3D theater will close on Sept. 8 and reopen around Oct. 6 with a new screen and a **Dolby** Atmos sound system. The new screen will be 70 feet (21 meters), the same as the current one, but shorter, to reflect the 1.9:1 aspect ratio of digital cinema.

After the switch, it will be known as the Entergy Giant Screen Theater.

The bid for the conversion was awarded to **Cobalt Construction** of Slidell, LA, which subcontracted the system integra-

tion and installation to **Entertainment Supply and Technologies** of Tampa, FL. EST's clients include top chains such as **Regal Entertainment**, **AMC Theatres**, and **Cinemark**, as well as **Imax Corporation**.

Theater manager **Rodney Daniels** tells *LFX* that the only changes to the auditorium will be upgrades to the railings and pit access, and to the side walls, which will be acoustically treated with a darker paint to reduce internal reflections.

B&D to distribute *Space Next*

Big & Digital has announced that it will distribute **Afterglow Studios'** ***Space Next*** to giant-screen and fulldome theaters starting this fall. The film is directed by **Luke Ployhar**, produced by Ployhar and **Ashley Jahnke**, and written by **Scott Pearson** and **Barry Thorson**. It will be screened at the **Giant Screen Cinema Association**'s conference in September, and distributed in 20- and 40-minute versions in 2D and 3D, in 15/70, IMAX and standard digital, and fulldome formats.

According to a press release, "*Space Next* offers a glimpse into tomorrow, and the possibilities of what is to come by way of private space developments and national space programs. The result is a mesmerizing display of interplanetary excellence sure to inspire a generation of explorers, scientists, and dreamers."

Ployhar's company, Afterglow Studios, has produced visual effects for 2001's *Planet of the Apes*, *Minority Report*, and last year's ***Antarctica 3D: On the Edge***.

Imax options *Moby Duck*

Donovan Hohn's 2011 best selling nonfiction book, ***Moby Duck***, about the accidental dispersal of thousands of rubber duck bath toys from a ship in the North Pacific, is being made into a giant-screen film by **Imax Corporation**. **Drew Fellman**, producer of ***Born to Be Wild*** and ***Island of Lemurs: Madagascar***, will write, produce, and direct the film.

In 1992, a container with 28,800 rubber duckies and other animals fell off a cargo ship in the North Pacific. A year later, the toys began washing up on beaches in Alaska and elsewhere, leading oceanographers to use them to track ocean currents. Journalist Hohn picked up the story in 2005, and according to a press release, "he figured he would interview a few oceanographers, talk to a few beachcombers, and read up on Arctic science and geography. But questions can be like ocean currents: wade in too far, and they carry you away. Hohn's accidental odyssey pulls him into the secretive arena of shipping conglomerates, the daring work of Arctic researchers, the lunatic risks of maverick sailors, and the shadowy world of Chinese toy factories."

Imax has not said when production will start or when the film will be released.

Imax deals in US, UAE, Nigeria

Imax Corporation has announced three theater deals for a total of six new theaters in the U.S., the United Arab Emirates, and Nigeria.

In the U.S., **Carmike Cinemas** will add three new IMAX screens to the 16 it currently operates and the six it has under contract. Two of the three new theaters will be in Missoula and Billings, marking the first multiplex IMAX theaters in Montana. The third will be in Manhattan, KS. Based in Columbus, GA, Carmike operates over 2,900 screens in 273 locations in 41 states, including 16 IMAX theaters and 29 of its own "BigD" premium large-format auditoriums.

Novo Cinemas will install two IMAX laser systems in two new locations in Dubai, UAE: the **Wafi Mall Shopping Center** and **IMG Worlds of Adventure**, the world's largest indoor theme park. The deal brings Novo's IMAX commitment to six, two of which are currently open at the **Ibn Battuta Mall** in Dubai and the **Pearl Mall** in Qatar.

In Nigeria, **Filmhouse Cinemas**, the country's largest theater chain, will open an IMAX screen in a new theater to be built in Lagos. It will be the first IMAX theater in Nigeria.

Imax press releases did not disclose opening dates for any of the theaters.

Brenek heads Imax home ent.

Imax Corporation has named **Jason Brenek** as president of its newly formed home entertainment division, "responsible for a series of IMAX global initiatives and products designed collectively to translate elements of the IMAX Experience to the home environment setting," according to a press release. He was also named executive vice president of Imax Corp., and will report to **Robert Lister**, chief business development officer.

Brenek comes to Imax from **Disney**, where he worked in theatrical distribution and home media distribution.

Montreal's La Roche promoted

The **Montreal Science Centre** has announced that **Julie La Roche** has been named director of the new business development division, in which position she will "be responsible for all strategic development activities, new business initiatives, quality control program, special events activities service, as well as sponsorships and the Montreal Science Centre Foundation," according to a press release. She will also continue to supervise the center's 380-seat IMAX 3D GT theater.

La Roche started with the science center in 1995 as IMAX theater manager, and most recently held the title of director of sales, products, and customer services. She holds a bachelor's degree from the École des Hautes Études Commerciales in Montreal.

John Lewis on Upgrading a Giant-Screen Theater

*(from **UPGRADING** on page 1)*

tional exhaust, electrical service, and control and signal cabling, and in many cases enlarging the port glass projection window. Many theaters opt to use the downtime to perform full renovations of the auditorium and lobby flooring and fixtures.

Whatever your situation, it is a big project with a myriad of moving parts that will require planning, organization, patience, and no small amount of luck to pull off successfully.

One important lesson that I have heard over and over again from colleagues: don't try to do it all yourself! Resist the temptation to purchase the projectors and sound system components direct from the manufacturers, and then set them all up using your in-house technical staff. Regardless of how talented you and your technicians are, you have to consider the big picture. Find a good systems integrator and let them take on the task of designing, installing, and commissioning the system. Just making the all the necessary preparations to allow them to do their job will be more than enough to keep you busy.

At Austin's Bullock Texas State History Museum, a hole had to be cut through the building's granite exterior wall to get the screen roll into the theater.

Photo by John Lewis.

Also, be sure to allow yourself enough time to ensure success. No one wants his or her theater to be closed for any length of time, turning away patrons and cutting off income. But don't try to squeeze all of these important tasks into an unrealistic timeline. Give contractors the time and space they need to complete their phase of the project. Some overlap may be feasible, but having different trades stepping on each other to get things done will cause delays and ultimately affect the quality of everyone's work.

The importance of rigging

Choose your contractors carefully, especially your rigger. A rigger is responsible for moving and lifting heavy equipment or materials into place and securing them safely. It is an exact science whose outcome is a matter of life safety. When it comes to rigging, you don't want to cut corners. Make sure you find a theatrical rigging contractor with a solid track record and experience with cinema screens. You only have one chance to get the screen raised and stretched without damaging it. One crease, dimple, or smear of dirt or grease can ruin a $150,000 screen, and having a replacement manufactured and shipped could cost you an additional six to ten weeks. Even if you can get insurance to pay for lost revenue during that time, an unscheduled and lengthy closure will be bad for business.

It is a good idea to have your existing speaker and screen rigging thoroughly inspected before beginning your upgrade project. Don't wait until the project has begun and you are on a tight schedule. Unless you handled the original installation yourself, don't assume that the original installers did a good job. Speaker rigging over the seating areas can be very tricky to access, requiring scaffolding or a personnel lift set up over the seating. This is all the more reason to make very sure it was done correctly and has stood the test of time.

Since rigging points are so difficult to reach, the rigger installing them can be reasonably sure that no one else will be coming behind them any time soon to inspect the work. I've heard horror stories from riggers who have started work in existing buildings and discovered ridiculously unsafe installations that could have easily ended in disaster. Make sure you choose a rigger who knows what he or she is doing and can be trusted to take the time and spend the money to do it right. Having your theater go dark for an extended period is indeed bad for business, but it is nothing compared to an injury or death caused by unsafe rigging practices.

Replacing the screen

Depending on the design of your theater, installing the new screen can be one of the most challenging aspects of your upgrade project. In years past, it was common to receive the screen unpainted, raise and stretch it, and then paint it in the theater. These days most screen manufacturers only provide guarantees for screens painted at the manufacturing facility. Once the screen has been painted, maintaining the screen's pristine finish requires that it cannot be folded or creased. That means that the screen will need to be loaded into the theater on one very long roll, equivalent in length to the height of your screen. Consider yourself lucky if your theater has easy access for loading in a rolled up screen that is anywhere from 50 to 80 feet (15 to 24 meters) long, or even longer.

If you are among the unfortunate theaters with no easy access for a screen roll this size, you'll have to get creative. You'll need to create a roughly three-foot-square entry path into the theater. Depending on the layout of your theater, this may require removing windows or punching through existing walls. For the latter, your entry may be further complicated by hid-

Photo by John Lewis.

Austin: Moving the screen in. Note that the seats are covered to control dust.

den plumbing, electrical, structural, or HVAC elements inside the walls. If you don't have a complete set of as-built drawings for your facility, it may be necessary to punch some holes and perform a little exploratory surgery on your walls to make sure you have a clear shot into the auditorium.

Even with accurate drawings, don't forget that throughout the life of your facility there may have been changes or additions to the infrastructure that weren't noted on the drawings. Don't take anything for granted here. Discovering an impediment after the project has started could create serious delays.

You'll also have to consider the screen's approach from the exterior. It will arrive on a flatbed trailer enclosed in a long crate roughly two feet square and weighing at least one ton. Depending on your theater's location and layout, you may need to close the street outside to traffic to get the screen off the truck and into the theater. If your theater is on an upper level, you may need to rent a crane.

I strongly recommend bundling this phase of the project into the rigger's scope of work. You'll have one contractor responsible for the screen from the time it arrives on site until it is safely rigged and stretched. Keep in mind that whatever your approach, you will likely have to do it again. With normal use, fading, and dust accumulation, a screen may need to be replaced after 10 to 15 years. If you are unlucky, your screen could be damaged sooner than that. Or as screen technology progresses you may find yourself wanting to upgrade to a screen with different reflectivity characteristics. For instance, if you install a laser system, you may be able to switch from silver to matte white.

Whatever the case, you'll be smart to design your entry port so that it is easy to access in the future. If you are making holes in walls, consider installing a door or easily removable wall insert. At the **Bullock Texas State History Museum** in Austin, we needed an entry hole cut into an exterior granite wall. (*See photo opposite.*) After exploring a number of options, we decided to install a faux louvered panel to match the building's other existing air intakes. The result was an unobtrusive access port that blends in with the building's exterior, but can be easily removed when access is needed.

Replacing the speakers

In addition to loading in and raising the screen, your rigger will be dealing with removing and replacing the speakers in the auditorium. For standard six-channel, giant-screen systems, this should be reasonably straightforward. As I mentioned above, you'll need to confirm that your original rigging infrastructure was installed correctly and has not degraded or been damaged over the years.

There's also a good chance that your new speakers will weigh more than your current ones. The trend in giant-screen audio systems has been towards larger speaker arrays with cabinets built to direct and contain the sound better. Make sure that your current rigging will support the increased weight. In most giant-screen theaters the front speaker clusters are rigged from a scaffold screen frame. Reinforcing these positions for additional weight should be simple. The rear speaker channels can present more of a challenge, as they are normally hung from steel beams over the seating area and will be harder to access.

If you don't already have it, this would be a good time to look into adding a platform or even a simple ladder on the back wall of the theater that will give technicians access to the rear speaker clusters without the need for scaffolding or a personnel lift over the seats. An addition like this can pay for itself quickly if you need to repair, replace, and/or re-focus any speakers even once.

Any additional rigging or access infrastructure should be certified by a structural engineer, and this can take time. If your upgrade includes expanding your sound system to one of the new immersive 11.1 or larger systems, this will be a much bigger job, necessitating the addition of multiple speaker positions along the ceiling and side walls. I was lucky to manage a theater for several years that had a very accessible and user-friendly catwalk, similar to those found in conventional live

*(see **UPGRADING** on page 8)*

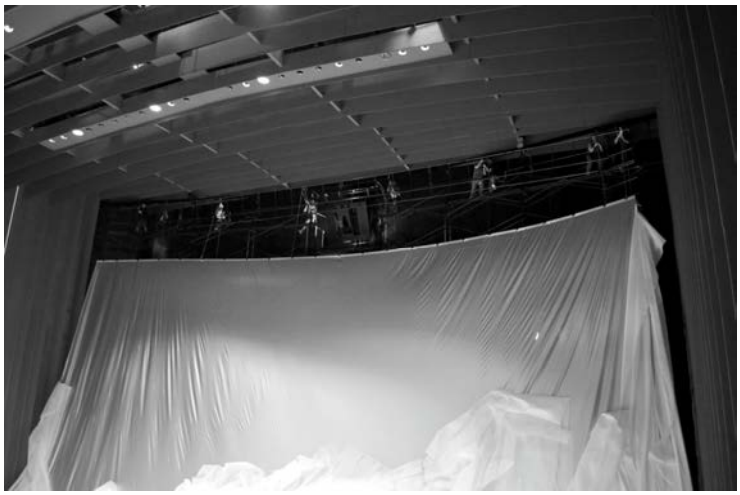


Photo by David Ripper.

Austin: Hoisting the screen to the top of the frame.

*(from **UPGRADING** on page 7)*

theaters and concert halls. This made it very easy to access the ceiling area for adding speakers or lighting instruments. It also saved a great deal of time during routine maintenance and cleaning.

However, my experience touring and working in theaters across the globe has shown me that very few giant-screen theaters have been designed with this versatility. Most theaters are equipped with inexpensive secondary suspended ceilings, known as dropped ceilings, that do not have the ability to integrate new speaker or lighting positions easily. If you have a dropped ceiling and are considering removing it, be sure to consult with an acoustical engineer, as this will definitely affect the acoustics of your theater.

Controlling dust

Another huge issue for a project such as this is dust abatement. Renovating walls, replacing flooring, and running electrical conduit all create a great deal of dust and debris. This dust will be your worst enemy if you don't keep it under control. If you don't have a near clean-room environment when it is time to load the screen in, your new screen will become a dust magnet, reducing your screen gain before you ever even project an image on it.

Make sure all of your contractors are aware that there will be zero tolerance for dust. All construction projects will need to be contained in plastic sheeting. All work will have to be cleaned up completely at the end of each day. Many contractors are not used to working under these strict guidelines. This will add time and money to their estimates, but it certainly beats the alternative.

Additional improvements

You owe it to yourself to use this valuable downtime to your advantage. A grand theater renovation is a perfect opportunity to make small changes or additions that will help your theater operate more efficiently or improve the visitor experience. Sit down with your projection and hosting staff and brainstorm ideas for improvements that might help them perform their jobs better or more efficiently.

Also look for ideas that might facilitate innovative new ways to use your theater. In the digital age, theater managers are working hard to expand their audiences by providing experiences beyond the normal cinema model. Video gaming on the giant screen has become very popular, as have multi-media presentations. Some GS theaters have even hosted live music, dance, and performance art pieces. These alternative uses will often require adding cabling to and from the booth.

Additional microphone, speaker, and data ports in the theater are worth considering. How many times have your technicians had to run a cable through a window from the booth to the front of the auditorium? Make it easy on them by installing a cable pass-through port through the booth wall, or a cable trough in the auditorium that will eliminate the need to tape down cables along the floor.

CEO in the Scaffolding!

When the Pacific Science Center in Seattle, WA, installed its IMAX laser system this spring, many of the staff pitched in, including interim CEO Cory Sbarbaro (center), who helped the riggers hanging the screen from the top of the screen tower. Sbarbaro is a rock climber in his spare time. PSC's Diane Carlson notes, "No one can recall a CEO climbing to the top and helping to lift the screen."

Photo by Sean Airhart, Pacific Science Center.

Each theater has its own unique set of circumstances and challenges. Consult with your staff and come up with the right solutions for your space and budget. While you have an electrical contractor in the theater running conduit for power, control, and signal cabling, you may as well provide some room to expand in the future. It doesn't cost much to have the contractor run an extra empty conduit or two to the various positions that need to be reached. Then when it is time to run cabling for new lighting, speakers, or some as yet unforeseen technology, the infrastructure will already be in place.

Simplify maintenance

If you are renovating the auditorium, make sure to design your new environment for today's audiences. Many institutional theaters that have been in business for more than a few years were designed for showing standard forty-minute educational films, not DMR films. Patrons viewing a two-hour movie demand the same experience they get at the multiplex, including comfortable seating and a wide variety of concessions. If you haven't already, this is a good opportunity to install cupholders to reduce spills.

On that topic, cloth seat covers and carpeted floors will soak up soda and popcorn spills. Consider changing to vinyl seat covers and tile or laminate flooring to save cleaning time. While you're at it, adding number plates to the seats and rows will give you the option of selling reserved seats on special occasions.

These examples should help get the conversation started about how best to execute your theater's upgrade project. Giant-screen theaters are like snowflakes, each one is fantastically unique. There is no one solution that will fit everyone's circumstances. It is up to you and your staff to find the best path forward, so do your homework and triple check all your preparations. The old carpenter's adage, "Measure twice, cut once" is a good rule to follow here. In my head, I always hear the words of my college mentor, still crystal clear after all these years: "If you don't have time to do it right, when will you have time to do it over?"

John Lewis is a production manager and giant-screen theater consultant with over 20 years' experience in the entertainment industry. He can be reached at johnlewisproductions@gmail.com.

Premiering This Summer

Terminator Genisys

Terminator Genisys

"When John Connor, leader of the human resistance, sends Sgt. Kyle Reese back to 1984 to protect Sarah Connor and safeguard the future, an unexpected turn of events creates a fractured timeline. Now, Sgt. Reese finds himself in a new and unfamiliar version of the past, where he is faced with unlikely allies, including the Guardian, dangerous new enemies, and an unexpected new mission: To reset the future...."

Produced and distributed by **Paramount Pictures**. Directed by **Alan Taylor**. Starring **Emilia Clarke**, **Jai Courtney**, **Arnold Schwarzenegger**, **Matt Smith**, **Jason Clarke**, **J.K. Simmons**. Release: July 1. DMR.

Ant-Man

"Armed with a super-suit with the astonishing ability to shrink in scale but increase in strength, cat burglar Scott Lang must embrace his inner hero and help his mentor, Dr. Hank Pym, plan and pull off a heist that will save the world."

Produced by **Marvel Studios** and distributed by **Walt Disney Pictures**. Directed by **Peyton Reed**. Starring **Evangeline Lilly**, **Hayley Atwell**, **Paul Rudd**, **Judy Greer**, **Corey Stoll**, **Michael Douglas**, **Bobby Cannavale**, **Wood Harris**. Release: July 17. DMR.

Pixels

"When intergalactic aliens discover video feeds of classic arcade games and misinterpret them as a declaration of war, they attack the Earth, using the video games as the models for their assaults."

Produced by **Columbia Pictures** and distributed by **Sony Pictures Releasing**. Directed by **Chris Columbus**. Starring **Peter Dinklage**, **Adam Sandler**, **Michelle Monaghan**, **Sean Bean**, **Josh Gad**, **Kevin James**, **Lainie Kazan**, **Jane Krakowski**. Release: July 24. DMR.

Mission: Impossible – Rogue Nation

"Ethan and team take on their most impossible mission yet, eradicating the Syndicate — an International rogue organization as highly skilled as they are, committed to destroying the IMF."

Produced by **Bad Robot** and distributed by Paramount Pictures. Directed by **Christopher McQuarrie**. Starring **Tom Cruise**, **Simon Pegg**, **Rebecca Ferguson**, **Jeremy Renner**, **Alec Baldwin**, **Ving Rhames**. Release: July 31. DMR.

The Man from U.N.C.L.E

"In the early 1960s, CIA agent Napoleon Solo and KGB operative Illya Kuryakin participate in a joint mission against a mysterious criminal organization, which is working to proliferate nuclear weapons."

Produced and distributed by **Warner Bros. Pictures**. Directed by **Guy Ritchie**. Starring **Henry Cavill**, **Alicia Vikander**, **Hugh Grant**, **Armie Hammer**, **Jared Harris**. Release: Aug. 14. DMR.

Ant-Man

Filming Mission: Impossible – Rogue Nation *with Tom Cruise in London.*

L: Paramount Pictures. R: Marvel Studios.

Paramount Pictures

*(from **GSCA** on page 1)*

Film screenings

Of the nine new films, two are completed projects that have not been screened at previous industry meetings: ***Space Next 3D*** from **Afterglow Studios** and distributed by **BIG & Digital**, and ***Wild Africa 3D***, produced by **BBC Earth** and distributed by BBC Earth and **Giant Screen Films**. Two films from **Colossus Productions** will be shown in fine cut form: ***Amazing Mighty Micro Monsters 3D*** (formerly known as *Micro Monsters*) and ***Museum Alive 3D***. And two rough cuts will be run: **MacGillivray Freeman Films'** ***America Wild: A National Parks Adventure*** and **nWave Pictures'** ***Wild Cats 3D***.

Among films in production are projects from industry veterans and newcomers on space, weather, soaring, India, Cuba, and oceans. After being officially untitled for more than a year, director **Toni Myers'** space film now has the working title ***A Beautiful Planet***. Footage from **Stephen Low**'s film on aircraft carriers will be screened, as will scenes from stormchaser **Sean Casey**'s ***Extreme Weather*** and **Stephen van Vuuren**'s long-awaited space odyssey, ***In Saturn's Rings***.

Pascal Vuong's ***Solar Impulse*** is following the story of the solar powered airplane of the same name as it attempts to fly around the world. BBC Earth and Giant Screen Films are collaborating again on ***Oceans: The Blue Planet***, and **3D Entertainment**'s **Mantello** brothers will present their latest project, ***Sea of Cortez***.

First time presenter **Joey Shanks** will discuss his film, ***Creating the Cosmos***, about the prevalence of organic matter in the universe, and **Matt Murray** will present ***Soar*** (wt), about the beauty and wonder of flying in high performance gliders.

Films in development include the usual wide range of hopeful concepts, new and familiar, including insects and dinosaurs, exotic locations and animals, the history of the universe and the future of the Earth.

Professional development

Several panel discussions will cover topics of interest to the industry. The perennial "Giant Screen 101" will provide newcomers to the business with a basic understanding of several unique aspects of the business of GS films and theaters, including negotiating film contracts and marketing and distribution.

The AMC Metreon IMAX in San Francisco will host screenings at the GSCA conference.

In "Technology Trends and the Future of Giant Screen" moderators **Paul Fraser** of **Blaze Digital Cinema Works** and **Martin Howe TEQ4** will lead a panel discussion on the transition of GS projection — on domes and flat screens — from film to digital, and how lasers and fulldome systems will affect the industry.

"My Theater Had a Great Year (And Other Tales of the Unimaginable)" will look at great marketing ideas, exhibition sponsorships, ticketing strategies, and alternative content.

Three concurrent sessions will look at film and theater marketing, developing ancillary educational materials for GS films, and the relationship of sensor resolution and motion on image quality.

The technical session will feature presentations about various technical developments, details to be announced.

Dome Day in San Jose

On Saturday, Sept. 12, the conference will travel about 50 miles (80 kilometers) to San Jose, CA, at the south end of the bay, for Dome Day at the **Tech Museum of Innovation**. (The Tech also hosted Dome Day in 2012, when the conference was held in Sacramento.) Six of the new films will be screened in the Tech's 82-foot (25-meter) **Hackworth IMAX Dome Theater**.

Evans & Sutherland will present a demonstration of its 8K fulldome system, Digistar 5, featuring Christie 4K projectors, similar to the demo at the **Science Museum of Virginia** held last fall (*see LFX, Oct-Nov. 2104*). The system provides resolution and brightness that rivals 15/70 film, and features "proprietary auto alignment and blending systems to create a seamless ultra-high resolution image across the dome," according to the company. GS film content will be presented on the whole dome, and a separate 4K projector will present Hollywood trailers and other material on an "insert" window on the front of the dome.

Veteran director **Greg MacGillivray** will present "How I Stopped Worrying and Learned to Love the Dome," a workshop on how to maximize the impact of your film in dome theaters. He will showcase shots and sequences whose lighting, camera movement, composition, and subject matter all work on the dome, contrasting them with clips that don't work.

For more information about the conference, and to register, visit giantscreencinema.com.

GSCA Conference Schedule

Monday, September 7: Pre-Conference Day

3:00 pm – 8:00 pm	Registration and Information	Hotel: Cyril Magnin Foyer

Tuesday, September 8: Pre-Conference Day

8:00 am – 8:00 pm	Registration and Information	Hotel: Cyril Magnin Foyer
8:00 am – 8:00 pm	Film Rehearsals	Theater
10:30 am – 12:00 pm	3D Film Interest Group*	Hotel: Fillmore
11:00 am – 3:00 pm	Board Meeting	Hotel: Mission Street
3:00 pm – 6:00 pm	Giant Screen 101	Hotel:Market Street
6:00 pm – 7:00 pm	New Members and First-Timers Reception (by invitation only)	Hotel: Mission Street
7:00 pm – 8:00 pm	Distributor Interest Group*	Hotel: Fillmore

Wednesday, September 9: Conference Day 1

	Breakfast on your own	
7:30 am – 8:45 am	Committee Meetings	
	• Conference	Hotel: Powell
	• Marketing & Member Services	Hotel: Fillmore
9:00 am – 5:00 pm	Registration and Information	Theater
	Walk to Theater	
10:00 am – 10:30 am	Welcome to GSCA	Theater
10:30 am – 11:15 am	Film 1: ***Wild Africa 3D*** (digital 3D)	Theater
11:15 am – 12:00 pm	Film 2: tba	Theater
12:00 pm – 1:30 pm	Lunch on your own	
12:00 pm – 1:30 pm	Euromax Meeting and Lunch	
12:00 pm – 1:30 pm	Awards rehearsal	
12:00 pm – 1:30 pm	Alternative Content Meeting and Lunch	
1:30 pm – 2:15 pm	Film 3: ***America Wild*** (rough cut, 15/70 2D)	Theater
2:15 pm – 4:45 pm	Films in Production	Theater
4:45 pm – 5:45 pm	Projects in Development	Theater
5:45 pm – 6:00 pm	Trailers	Theater
6:00 pm	Walk to hotel	
6:30 pm – 9:00 pm	GSCA Awards and Reception	Hotel: Cyril Magnin Ballroom

Thursday, September 10: Conference Day 2

	Breakfast on your own	
8:00 am	Walk to Theater	
8:30 am – 1:30 pm	Registration and Information	Theater
8:30 am – 9:00 am	GSCA Members Meeting	Theater
9:00 am – 9:45 am	Film 4: ***Museum Alive 3D*** (fine cut, digital 3D)	Theater
9:45 am – 10:30 am	Film 5: ***Robots 3D*** (15/70 3D)	Theater
10:30 am – 10:45 am	Break	Theater
10:45 am – 11:30 am	Film 6: ***Space Next 3D*** (digital 3D)	Theater
11:30 am – 12:15 pm	Film 7: ***Journey to Space*** (digital 3D)	Theater
12:15 pm – 2:00 pm	Lunch on your own	
12:15 pm – 2:00 pm	Research Task Force Meeting and Lunch	
2:00 pm – 6:30 pm	Registration and Information	Hotel: Cyril Magnin Foyer
2:00 pm – 3:30 pm	Technology Trends and the Future of Giant Screen	Hotel: Cyril Magnin Ballroom
3:30 pm – 5:00 pm	My Theater Had a Great Year (And Other Tales of the Unimaginable)	Hotel: Cyril Magnin Ballroom
5:00 pm – 5:15 pm	Break	
5:15 pm – 6:30 pm	Concurrent Professional Development Sessions:	
	All That Stuff Besides the Film: Giant Screen Ancillary Materials	Hotel: Market Street
	Great Results with Great Marketing	Hotel: Cyril Magnin Ballroom
	Motion Versus Resolution in Giant Screen Productions	Hotel: Powell
6:30 pm	Dinner on your own	

Friday, September 11: Conference Day 3

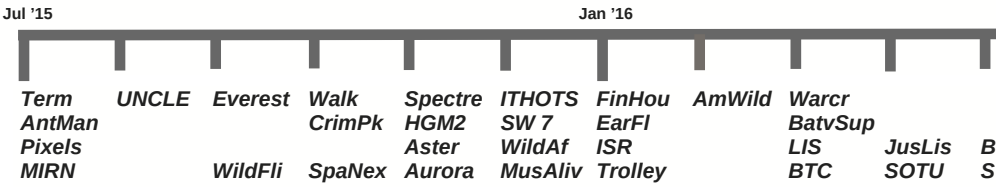
7:30 am – 8:45 am	Committee Meetings	
	• Technical	Hotel: Market Street
	• Lifelong Learning	Hotel: Lombard
	• Professional Development	Hotel: Powell
8:45 am	Walk to theater	
9:00 am – 4:00 pm	Registration and Information	Theater
9:00 am – 9:45 am	Film 8: ***Jean-Michel Cousteau's Secret Ocean*** (digital 3D)	Theater
9:45 am – 10:30 am	Film 9: ***Humpback Whales*** (15/70 3D)	Theater
10:30 am – 10:45 am	Coffee Break	
10:45 am – 11:30 am	Film 10: ***Wild Cats 3D*** (rough cut, digital 3D)	Theater
11:30 am – 12:15 pm	Film 11: ***Amazing Mighty Micro Monsters 3D*** (fine cut, digital 3D)	Theater
12:15 pm – 1:30 pm	Lunch on your own	
1:30 pm – 3:30 pm	Technical Session	Theater
3:30 pm	Walk to hotel	
4:00 pm – 8:00 pm	Registration and Information	Hotel: Cyril Magnin Foyer
4:00 pm – 8:00 pm	Trade show	Hotel: Cyril Magnin Ballroom
8:00 pm – 9:00 pm	GSCA Board Meeting	Hotel: Market Street
8:00 pm	Dinner on your own	

Saturday, September 12: Dome Day

7:00 am – 8:30 am	Bus trip to San Jose, leaves from hotel	
8:30 am – 6:00 pm	Registration and Information	Tech Museum of Innovation
9:00 am – 10:30 am	Evans & Sutherland Digital Dome Demonstration	Theater
10:30 am – 10:45 am	Break	
10:45 am – 11:45 am	Film 1: ***Robots***	Theater
11:45 am – 12:45 pm	Film 2: ***Humpback Whales***	Theater
12:45 pm – 2:00 pm	Lunch	Tech Museum of Innovation
2:00 pm – 2:45 pm	How I Stopped Worrying and Learned to Love the Dome	Theater
2:45 pm – 3:45 pm	Film 3: ***America Wild***	Theater
3:45 pm – 4:45 pm	Film 4: ***Jean-Michel Cousteau's Secret Ocean***	Theater
4:45 pm – 5:00 pm	Break	
5:00 pm – 6:00 pm	Film 5: ***Living in the Age of Airplanes***	Theater
6:00 pm – 7:00 pm	Film 6: ***Journey to Space***	Theater
7:00 pm	Dinner on your own	

*By invitation only. Special interest groups are run and managed by GSCA members but are not official GSCA groups.

This draft schedule was accurate as of July 21, but may change.



All films are 3D unless noted, underlined titles are 2D
* New listing.
Updated information is printed in **bold**.
Unless noted, all films run about 40 minutes.
Some titles with limited release territories are not listed.

Everest
Universal Pictures; distributor: Universal Pictures; director: Baltasar Kormákur. Cast: Jake Gyllenhaal, Keira Knightley, Robin Wright, Josh Brolin, Sam Worthington, Emily Watson. Release: Sept. 18. DMR.

Wild Flight 3D
Colossus Productions, Atlantic Productions; distributor: Atlantic Productions; director: David Lee; producer: Anthony Geffen; writer: David Attenborough; DPs: Paul Williams, Peter Parks, Chris Parks; executive producer: Anthony Geffen. Release: Fall.
– Principal photography is complete. Post-production is under way.

The Walk
Sony Pictures Entertainment; distributor: Sony Pictures Releasing; director: Robert Zemeckis. Cast: Joseph Gordon-Levitt, Ben Kingsley, Charlotte Le Bon, James Badge Dale, Ben Schwartz. Release: Oct. 2. DMR.

Crimson Peak
Legendary Pictures; distributor: Universal Pictures; director: Guillermo del Toro. Cast: Charlie Hunnam, Jessica Chastain, Tom Hiddleston, Mia Wasikowska, Doug Jones, Jim Beaver. 2D. Release: Oct. 16. DMR.

Space Next 3D
Afterglow Studios; distributor: TBD; director, producer: Luke Ployhar; script: Scott Pearson. Release: Fall.

Spectre
MGM; distributor: Columbia Pictures; director: Sam Mendes. Cast: Dave Bautista, Ralph Fiennes, Daniel Craig, Monica Bellucci, Christoph Waltz, Léa Seydoux. Release: Nov. 6. DMR.

The Hunger Games: Mockingjay Part 2
Lionsgate; distributor: Lionsgate; director: Francis Lawrence. Cast: Jennifer Lawrence, Josh Hutcherson, Liam Hemsworth, Woody Harrelson, Elizabeth Banks, Julianne Moore, Philip Seymour Hoffman, Jeffrey Wright, Stanley Tucci, Donald Sutherland, Toby Jones. Release: Nov. 20. DMR.

In the Heart of the Sea
Warner Bros. Pictures; distributor: Warner Bros.; director: Ron Howard. Cast: Chris Hemsworth, Cillian Murphy, Charlotte Riley, Ben Whishaw, Brendan Gleeson, Benjamin Walker. 2D. Release: Dec. 11.

Star Wars: Episode VII
LucasFilm Ltd; distributor: Walt Disney Pictures; director: J.J. Abrams. Cast: Harrison Ford, Carrie Fisher, Mark Hamill, Andy Serkis, Oscar Isaac, Peter Mayhew, Max von Sydow. Release: Dec. 18. DMR.
– Filmed in part with IMAX cameras.

Wild Africa 3D
BBC Earth, Evergreen Studios; distributor: BBC Earth, Giant Screen Films, Reliance Entertainment, IM Global; directors: Patrick Morris, Neil Nightingale, Mike Slee; producers: Neil Nightingale, Myles Connolly, Amanda Hill; DPs: Mark Deeble, Robin Cox; score: Patrick Doyle; executive producers: Deepak Nayar, Stuart Ford, Marcus Arthur, Mike Newell, Mike Devlin, Miles Ketley. Release: December.
– **Will premiere at the GSCA conference in September.**

Asteroids: Mission Extreme
National Geographic Studios; distributor: National Geographic Studios; director, producer: Annette Sotheran-Barnett; script: Annette Sotheran-Barnett, Mose Richards; executive producer: Brooke Runnette, Steven T. Savage. Release: late 2015 (fulldome), early 2016 (flatscreen).

Aurora (wt)
Kallisti Media; distributor: tba; director: Jon Kitzen; producers: Nick Reed, Jon Kitzen; script: Jon Kitzen, Jessica Hendrickson; DP: Geoff Brown. Release: 2015.

Museum Alive 3D
Colossus Productions, Atlantic Productions; distributor: Atlantic Productions; director: Daniel M. Smith; producer: Anthony Geffen; script: David Attenborough, Mike Davis; DP: Tim Cragg, Chris Parks; score: Ilan Eshker. Cast: David Attenborough. Release: 2015.

The Trolley *****
An electrifying journey through great cities across the globe that tells the story of a remarkable invention and its impact on civilization.
Stephen Low Company; distributor: Stephen Low Company; director: Stephen Low. 2D Release: late 2015.
– Filmed in Geneva, Lyon, Montpellier, Marseille, Nice, Milan, Toronto and Hong Kong in 2013 and 2014.

The Finest Hours
Walt Disney Pictures; distributor: Walt Disney Pictures; director: Craig Gillespie. Cast: Chris Pine, Eric Bana, Ben Foster, Graham McTavish, Rachel Brosnahan, Kyle Gallner, Casey Affleck. Release: Jan. 29, 2016. DMR.

Earthflight 3D
BBC Earth; distributor: Giant Screen Films; director, producer: John Downer; executive producers: John Downer, Neil Nightingale. Release: January 2016.
– In post-production.

In Saturn's Rings
SV2 Studios; distributor: BIG & Digital; director, producer, writer, executive producer: Stephen van Vuuren. 2D. Release: early 2016.
– June: Image processing.
– July: Rendering of film images began.
– Sound mix and musical score are continuing.

America Wild: A National Parks Adventure
MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Greg MacGillivray; producer: Shaun MacGillivray; DPs: Brad Ohlund, Greg MacGillivray, Ron Goodman; script: Tim Cahill, Stephen Judson; score: Steve Wood. Release: Feb. 12, 2016.
– April: Filmed cherry blossoms in Washington, DC.

Warcraft
Universal Pictures; distributor: Universal Pictures; director: Duncan Jones. Cast: Dominic Cooper, Travis Fimmel, Paula Patton, Ben Foster, Toby Kebbell. Release: March 11, 2016. DMR.

Batman v. Superman: Dawn of Justice
Warner Bros.; distributor: Warner Bros.; director: Zack Snyder. Cast: Ben Affleck, Henry Cavill, Amy Adams, Jason Momoa, Gal Gadot, Jesse Eisenberg, Diane Lane, Jeremy Irons, Holly Hunter, Laurence Fishburne. 2D. Release: March 25, 2016. DMR.
– Filmed in part with IMAX cameras.

Life in Space
December Media; distributor: MacGillivray Freeman Films; director Steve Westh; producer: Stephen Amezdroz; script: Alex Low; executive producer: Tony Wright. Release: March 2016.
– June: filming began.

Behind the Cube
Radiant Images; distributor: tba; director, writer: Sean Phillips; producers: Brett Ratner, Bobby Mansouri, Michael Mansouri; DP: Vilmos Zsigmond; executive producer: Brett Ratner. Release: Spring 2016.

Just Listen: Interactive Theater Show (wt)
Foxfire Interactive, Masters Digital; digital distributor: Foxfire Interactive; producers, writers: Brad Lisle, Tim Archer; DP: Marcus Lehman, Sean White; executive producer: Brad Lisle .2D. Release: Spring 2016.
– **July: Filmed throat singers in Mongolia.**
– **Principal photography is compete.**

Secrets of the Universe
Stephen Low Company; distributor: K2 Communications; director: Stephen Low; producer: Pietro Serapiglia; DP: Mark Poirier; executive producer: K2 Communications. Release: spring 2016.

A Beautiful Planet (formerly *Untitled Toni Myers Space Film)*
Imax Corporation; distributor: Imax Corporation; director/producer: Toni Myers; DP: James Neihouse. Release: spring 2016.

Seapower (wt, formerly *Carrier*)
K2 Communications, Giant Screen Films; distributor: K2 Communications; director: Stephen Low; producer: Mark Krenzien. Release: 24-min. version: late spring 2016; 40-min. version: early 2017

– July: Shot aerials of flight operations aboard USS Ronald Reagan.

Solar Impulse 3D (wt)
N3D Land Films; distributor: tba; directors: Pascal Vuong, Ronan Chapalain; producers: Catherine Vuong, Pascal Vuong; script: Pascal Vuong; score: Franck Marchal; executive producers: Catherine Vuong, Pascal Vuong, Sylvain Grain. Cast: Bertran Piccard, André Borschberg. Release: Sept. 2016.
– **July: the Solar Impulse aircraft flew from Japan to Hawaii, but suffered damage to its batteries.**
– **April 2016: The flight around the world is expected to continue.**

Lightspeed Pioneers
No Final Frontier Productions, Mind's Eye Creative, Wonder Mill Cosmos; distributor: BIG & Digital (flatscreen), Evans & Sutherland (fulldome); director, producer, writer: Lee Fanning. 2D. Release: Fall 2016.

Predators
BBC Earth, Silverback Productions; distributor: BBC Earth, Giant Screen Films; director, producer, writer: Alastair Fothergill; DP: Jamie McPherson; executive producer: Neil Nightingale. Release: November 2016.
– **Principal photography is complete.**
– **Post-production is about to start.**

Extreme Weather
National Geographic Studios; distributor: National Geographic Studios; director, producer: Sean Casey; script: Mose Richards; executive producer: Brooke Runnette. Release: late 2016.

Amazing Mighty Micro Monsters (wt)
Colossus Productions, Atlantic Productions; distributor: Atlantic Productions; producer: Anthony Geffen. Release: 2016.
– Post-production is under way.

Patagonia 3D: Into the Wild (wt)
3D Entertainment Films; distributor: 3D Entertainment Distribution; directors/producers: François Mantello, Jean-Jacques Mantello; score: Christophe Jacquelin. Release: 2016.

Secrets of the Royal Garden (formerly *The Kingdom of Plants*)
Atlantic Productions; distributor: tba; director: Martin Williams; producer: Anthony Geffen; script: David Attenborough; DP: Tim Cragg; score: Joel Douek; executive producer: Anthony Geffen. Shot in 4K. Cast: David Attenborough. Release: 2016.

Train Time *
A remarkable perspective on the life of a railway network and a stunning and kinetic rail journey.
Stephen Low Company; distributor: Stephen Low Company; director: Stephen Low. 2D Release: 2016.
– July: Filmed aerials of trains in California, Oregon, and Washington with SpaceCam.

Dream Big: Engineering Wonders of the World (wt)
MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Stephen Judson; producer: Shaun MacGillivray; DPs: Brad Ohlund, Greg MacGillivray, Ron Goodman; script: Stephen Judson; score: Steve Wood. Release: February 2017.
– Summer: filming will resume, locations TBD.

Return to Everest
MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Greg MacGillivray; producer: Shaun MacGillivray; script: Stephen Judson; DPs: Brad Ohlund, Michael Brown, Greg MacGillivray, Jack Tankard, Ron Goodman; score: Steve Wood. Cast: Jamling Norgay, Araceli Segarra. Release: May 2018.

Sea of Love
Achtel Pty. Ltd.; distributor: tbd; director, producer, DP: Pawel Achtel; script: Jan Aldenhoven. Release: 2018.

Stephen Low Company

Members of the crew of U.S. aircraft carrier USS Ronald Reagan *and the aerial photography team for Stephen Low's* Seapower *pose on deck during refueling of the Spacecam-equipped helicopter. This was the first time a civilian aircraft was given permission to land, refuel, and reload film on a carrier during naval exercises. In purple are fuelers. In yellow is a "shooter," tasked to launch and recover aircraft from the flight deck, including the production chopper.*

How Lasers Are Used in Digital Cinema Projectors

by Walter Burgess and Kris Hesson

Just five short years ago, the world was hypnotized by the release of **James Cameron's** wildly successful 3D movie, ***Avatar***. The film's global box-office earnings were about $2.8 billion, causing audiences, movie producers and movie theater owners to proclaim the dawn of a new golden age of cinema. The spectacle of the 3D format was the future, and the future was now — or so the industry believed.

Some of those who tried to mimic the success of *Avatar* made bad technology choices and delivered hasty post-production 2D-to3D conversions. Audiences quickly developed a bad taste in the mouth for anything 3D. The "experience" just wasn't there, and the magical success of *Avatar* faded into legend.

From a high of 1.5 billion tickets sold worldwide in 2002, sales plunged by 300 million tickets to an estimated 1.2 billion tickets in 2014. The industry seemed to be in free fall, scrabbling to find ways to entice audiences back to movie theaters.

One more piece of the puzzle played into declining ticket sales and a slew of 3D flops: the viewing experience for 3D films was almost miserable. Sitting in a dark theater wearing clunky 3D glasses that feel like sunglasses doesn't make for the most enjoyable experience. With an average of only 20 percent of the projector's light reaching the viewer's eye, the image is just too dark to see and appreciate.

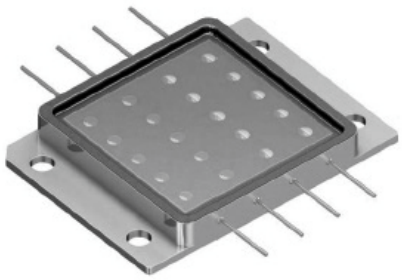
The darkness of 3D films results from the limitation of xenon bulbs as projector light sources. The bulbs can produce only a finite amount of light, and the amount that finally gets to the viewers' eyes (around 3 foot Lamberts) is not adequate to produce good 3D brightness levels (approximately 10 fL or more).

Fortunately, laser technology is being developed to overcome that problem. Lasers as light sources for cinema projection are a natural evolution of technology to meet the increasing demands of artists, cinema owners, and the moviegoing public.

So if we just stick a few lasers in there and point them at the screen, will everyone come running back to buy movie tickets? If only it were that simple. In reality, mountains of challenges must be overcome.

Some of the initial hurdles, surprisingly, were not engineering challenges but the outdated regulations. Under current U.S. laser safety regulations, laser-illuminated projection (LIP) is misclassified as a point source; in fact, it is an indirect laser light source. That is, LIP was considered as dangerous to human eyes as the lasers used in laser light shows.

The **Laser Illuminated Projector Association**, a trade organization for manufacturers of LIPs, has made great progress in getting laser-illuminated projectors classified appropriately. Today's legacy regulations were intended for rock concert laser shows, not laser-illuminated projection. Research supported by LIPA has proven that laser-illuminated projectors are no more hazardous than the lamp-based projectors currently used in every movie theater in the world. In mid-2014, the **European International Electrotechnical Commission** updated its IEC 60825-1:2014 laser regulations to correctly classify laser-illuminated projectors the same as lamp-based projectors. The Laser Illuminated Projector Association hopes that U.S. regulations will be updated soon to reflect the true nature and use of the technology.



Osram's PLPM4 is the type of laser array that powers digital cinema projectors.

Osram Semiconductors

Technical challenges for lasers

One of the first technical challenges that must be addressed is matching the brightness of the light source to the size of the movie screen; a light source must be scalable. Not every theater in the world is a 33-foot (10-meter) mom-and-popcorn stand. There are 100-foot (30-meter) "premium large-format" screens out there, and cinemas have plans for even bigger screens in the near future. Projector and light-source manufacturers have addressed this technical challenge by developing modular designs that allow more lasers to be added as screen size increases.

When you set out to replace a xenon bulb with other light sources, you quickly eliminate all light sources except lasers. When considering high-intensity bulbs, no other bulb can even come close to the intensity of xenon bulbs. LED sources have potential, but you would have to combine the output of many LEDs to achieve the necessary optical power levels for cinema. Unfortunately, such a large number of LED emitters would result in a source size that is incompatible with digital projection technologies. A supercontinuum laser light source contains the appropriate visible wavelengths, but it is quickly ruled out due to high cost and low output power. After eliminating other light source options, the only viable solution remaining is discrete lasers, which offer the highest output with the lowest cost per lumen.

In the visible part of the spectrum, it is more cost-effective to combine the outputs of multiple small light sources to achieve high power levels. A single large laser for red, green or blue is not a cost-effective solution. It would take 100 or more optical watts to satisfy the demands of a typical movie screen. Very few visible lasers in this power range can be made cost-effectively.

Two viable architectures — loosely categorized as free-space laser arrays and fiber-coupled light delivery — are capable of delivering the required amount of light to the screen. In a free-space laser array, individual laser diodes are mounted onto a cooling plate in a regular grid pattern. The array may contain hundreds of laser diodes, each of which must be meticulously

*(see **LASERS** on page 15)*

aligned to eliminate the inherent pointing errors found in all laser diodes. One generic example of a small laser array is the Osram PLPM4 blue laser. It contains 20 blue laser chips and has an overall output power of 50 W.

The second configuration, fiber optic delivery, uses fiber optics to gather laser light from each individual emitter in a highly efficient manner; the light from multiple fiber optics is then combined into a single beam of light.

Laser manufacturers have been combining multiple-pump laser emitters with fiber optics for decades. This is an ideal example of where the photonics industry is well positioned to address the lighting needs of the cinema industry. These combining techniques originally were developed for diode-pumped solid-state and fiber laser pumping. Many of these well-tested methods and processes can be applied directly to laser-illuminated projection. **Power Technology**, **Necsel**, and **Christie Digital** are just a few of the companies currently using fiber optics to combine laser beams successfully.

Each method has its advantages and disadvantages. Although free-space arrays allow a higher percentage of light to reach the screen, the difficulty of calibration makes for a more delicate system. Traditional fiber coupling allows for some light loss, but new methods, along with the relatively small size of the emitters as compared with the delivery fiber, permit high coupling efficiency. In fact, Power Technology achieves over 93 percent coupling efficiency. This tiny coupling loss is easily overcome by adding one or two additional laser diodes at a negligible increase in cost.

The free-space configuration has the advantage of not having the cost of fiber optics. In some case studies, the cost of fiber-coupled light delivery is inflated beyond a real-world value. Thanks to the telecom industry, fiber is a commodity material and has little cost impact.

In the unlikely event of a light-source failure, fiber optic delivery also has a special advantage: An average person can easily replace a fiber-delivered light source. It requires only three steps:

- Unplug the fiber optic cable, data cable, and power cable;
- Remove the failed light source and replace the rack with the spare unit;
- Reconnect the optical, data, and power cables.

The entire operation may take ten minutes. On the other hand, if a free-space laser array fails, a specially trained technician may be required to fly to the projector's location for service. In a worst-case scenario, a specialized cleanroom may be necessary to replace the laser array, and the projector may have to be shipped back to the manufacturer to prevent its expensive optics from being contaminated. Either option for repairing free-space arrays could translate into significant downtime for the projector and therefore revenue loss.

The **MG3D Theater** in the **Moody Gardens Spa and Convention Center** on Galveston Island in Texas, is a consistent early adopter of projection technologies; the first 4K six-primary (6P) laser-illuminated projector in the world was installed there in November 2014. "This [fiber-coupled] system is designed so that if any one of the modules has a problem, it just turns that module off, and it adjusts the light output so it is even in both eyes and we still get to play," said **Brandon Compton**, the theater's director.

No matter which architecture is used, significant numbers of laser diodes and a significant amount of heat must be managed. Red lasers convert electricity to light with an efficiency of 38%, while green and blue lasers have a conversion efficiency of approximately 21%. Green and blue semiconductor lasers also require an operating voltage of 6–8 VDC. This voltage is three times higher than that of a red laser diode. When totaled, the waste heat from all these laser diodes can be hundreds of watts — not a trivial amount to manage. In Power Technology's light source, air cooling was chosen over water cooling. While water cooling is efficient, the space demands and increased service costs outweigh the benefits. It should be noted that, even with a heat load of hundreds of watts, lasers produce far less heat than the xenon bulbs they replace.

One of the bigger challenges for LIP is on-screen speckle. Lasers make an efficient and bright light source, but they are inherently monochromatic devices. Combining red, green, and blue lasers to get white light often produces a sparkling, grainy pattern on the screen. Those effects can and must be mitigated. Many companies have developed technologies to mitigate the effects of speckle. In 2012, Power Technology completed a $1.5 million contract for a Tier 1 military supplier. During the project, five unique methods of speckle reduction were examined, tested, engineered, and ranked. The best speckle-reduction method was chosen, and a low-speckle military laser was commercialized. The design entered full production, and more than 80 laser systems were made and deployed. The technology has been proved to reduce speckle effectively while being immune to harsh environments. The knowledge gained during this program was instrumental in making a speckle-reduction technology for use with LIP.

Over the past few years, many speckle-reduction methods have been discussed in the media. One early method involved vibrating the movie screen. Vibrating or moving an optical element within the optical path is another successful way to reduce speckle. Lastly, new screen materials have been introduced to help reduce speckle to acceptable levels. **Harkness Screens**, a manufacturer of movie screens, has specifically designed the Clarus XC 170 screen for the unique characteristics of laser projection and to help reduce the effects of speckle.

Now that the technical challenges of affordably scalable lumen levels, speckle reduction and heat management have been met, OEM laser companies are positioned to make LIP ready for the sequel to *Avatar* in 2016. The light sources are sure to deliver incredible levels of brightness and detail on the screen — and help motivate audiences to return to the theater.

Walter Burgess is vice president for engineering at Power Technology. Kris Hesson is the marketing manager at Power Technology.

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*(from **CLOSED** on page 3)*

mastering and $300 digital print fees then being charged for comparable DCI-compliant services.

Sources tell *LFX* that today Imax's mastering fees remain substantially higher than conventional DCI processing, and digital prints are slightly more expensive. Imax has apparently dropped the 70mm footage quota, and as far as I know, has not refused to convert any other films.

But that does not change the fact that the IMAX digital format is proprietary and controlled exclusively by Imax Corporation. When having their films converted to the IMAX digital format, GS filmmakers do not have the option, as they do when making DCI-compliant DCPs, of shopping around for a post house with the best prices, or with other services or capabilities they might prefer. Since they cannot afford to ignore the large number of IMAX digital theaters, they pay Imax's higher prices, usually passing the expense along to the theaters in the form of print fees that amortize the mastering charges. Thus, virtually all titles made for GS theaters are available in the IMAX digital format.

But this lack of choice is what defines a system as "closed." And as with all proprietary systems, it increases costs to users and consumers.

The IMAX Experience

Imax executives have claimed that the reason the system is closed is that company has to protect its brand, and that its proprietary processing raises image quality to the standard of "The IMAX Experience." However, for all Gelfond's frequent talk of "special sauce," the company has never published detailed specifications for its projection systems, or supported side-by-side comparisons with other digital projection systems that would allow potential customers to see the difference with their own eyes. If the IMAX systems are substantially better than conventional digital projection, the company should have nothing to worry about from direct comparisons.

In my opinion, the difference between IMAX digital systems — both its first-gen, 2K xenon-based system and the new 4K laser system — and *similarly configured* non-IMAX digital systems would be difficult for most people to detect. The positive impression most consumers had of the first-gen IMAX digital systems may have largely been due to the fact that, at that time, virtually no other theaters used two projectors. So the IMAX image was obviously brighter, which helped with 3D in particular.

But since then, theater chains have learned that they can create a reasonable facsimile of the IMAX digital experience with a pair of high-powered 4K projectors, an upgraded sound system, and other amenities. They have done so in droves, so that premium large format (PLF) screens in multiplexes now outnumber all IMAX digital screens in North America, including those in multiplexes and museums. (*See Charlotte Jones' report on PLF, February 2015.*)

As I said in my laser article last month, without seeing any test images or side-by-side comparisons, my impression is that the IMAX laser system is also quite comparable in image quality to the laser systems from other leading manufacturers like Christie and Barco. And that Dolby's Dolby Vision system, with almost twice the 2D light output and 500 times more contrast, is head and shoulders above all of them.

The IMAX laser system's primary advantage is that it can project in the 1.43 aspect ratio, thereby filling the full height of existing IMAX 15/70 screens. The importance of this factor for most institutional giant-screen theaters cannot be overstated. The height of a true giant screen is a major differentiating point in comparison to conventional cinemas.

Theaters deciding which digital system they will choose to replace their 15/70 film projectors have many factors to consider: image and sound quality, cost, brand recognition, content availability, aspect ratio, and many more. All of the available systems have pros and cons in each area, and none is best in all of them. Each theater will have to decide which combination of features best meets its needs. I hope this article will help by clarifying the difference between "open" and "closed" systems.

Worldwide GS and IMAX Theaters

As of May 1, 2015

Note: To avoid double counting, theaters with digital and 15/70 systems are shown as 15/70 only.

C = Commercial Standalone CT = Theme Park
CM = Multiplex I = Institutional

By Format and Operator Type

		C	CM	CT	I	Total
Africa	D		6			**6**
	8/70				1	
	10/70				1	**1**
	15/70					
	Total		**6**		**2**	**8**
Asia/Pac	D	1	274	1	22	**298**
	8/70	1			8	**9**
	10/70				7	**7**
	15/70	1	5	1	27	**34**
	Total	**3**	**279**	**2**	**64**	**348**
Europe	D	2	112	2	4	**120**
	8/70	1		1	4	**6**
	15/70	5	2	5	8	**20**
	Total	**8**	**114**	**8**	**16**	**146**
Middle East	D		11			**11**
	8/70					
	15/70	1			2	**2**
	Total		**11**		**2**	**13**
North America	D	5	329	1	44	**379**
	8/70	3			9	**12**
	15/70	7	40		63	**110**
	Total	**15**	**369**	**1**	**116**	**501**
South America	D	1	20		1	**22**
	8/70				1	**1**
	15/70	1				**1**
	Total	**2**	**20**		**2**	**24**
World	D	9	752	4	71	**836**
	8/70	5		1	23	**29**
	10/70				8	**8**
	15/70	14	47	6	100	**167**
	Total	**28**	**799**	**11**	**202**	**1,040**

By 2D / 3D

	2D	3D	Total
Africa	2	6	**8**
Asia/Pac	51	295	**348**
Europe	18	128	**146**
ME	1	12	**13**
NA	69	432	**501**
SA	1	23	**24**
Total	**142**	**898**	**1,040**

By Screen

	Dome	Flat	Comb	Total
Africa	2	6		**8**
Asia/Pac	46	302		**348**
Europe	13	133		**146**
ME	1	12		**13**
NA	48	451	2	**501**
SA	2	22		**24**
Total	**112**	**927**	**2**	**1,040**

Seawatch.org

Bookings: Summer 2015 by Film

489 bookings of 79 films in 164 theaters

These listings to not include Hollywood films shown in multiplex IMAX theaters. Those films are listed when they are shown in non-multiplex theaters, and conversely, non-Hollywood giant-screen films showing on multiplex IMAX screens are also listed.

Listings shown in **bold face** below are new or updated listings. The rest are unchanged from the previous month's issue.

The data on the following pages are ***not*** warranted to be comprehensive or accurate in every detail, despite our best efforts to make them so. They have been compiled from theater surveys, distributors, the Web, and other sources.

We will make every effort to improve the thoroughness, and accuracy of these data. If your theater or film is not shown here, please get in touch with us to update our listings.

Where a date is not shown, it means that no date was provided by the source or, in the case of a closing date, that no date has been set, or that the run is indefinite.

The key to film abbreviations is on page 21.

Film	Theater	Open	Close
AAOU	Raleigh	5/1/15	
AfricAdv	Katowice CC	10/4/13	10/3/15
	Krakow CC	10/4/13	10/3/15
	Lodz CC	10/4/13	10/3/15
	Poznan CC	10/4/13	10/3/15
	Warsaw CC	10/4/13	10/3/15
AirRacer	Hutchinson	1/1/15	12/31/15
	Louisville KSC	1/1/15	12/31/15
AIWC	Chandigarh	9/5/14	9/4/15
	Sacramento Imx		**8/30/15**
Alamo	San Antonio 2D AMC		
Amazon	Hartberg	3/25/15	12/31/15
Animalop	Pittsburgh CSC	1/1/10	
APE	**Oulu**	**5/2/15**	**11/1/15**
Arabia3D	**Boston MOS**	**7/10/15**	**12/31/15**
Bugs	**Columbus COSI**	**9/15/14**	**6/30/16**
	Edmonton TWS	12/26/13	6/30/16
	London BFI	9/1/14	1/31/16
	Melbourne MV	4/10/13	9/30/15
	Paris Geo	4/7/15	7/5/15
	Raleigh	**7/5/14**	**6/30/16**
	Sydney WBS	8/6/14	8/6/15
	Thessaloniki	10/7/14	10/6/15
	Vancouver TWS	3/11/06	6/30/16
CRA	Hartberg	3/25/15	12/31/15
CV	Alexandria BA	10/1/13	12/31/16
D-Day	Cincinnati MC	5/15/15	
	Cleveland	5/8/15	5/22/16
	Davenport Put	5/22/15	
	Dearborn THF	3/28/14	9/15
	Hague	2/10/15	8/10/15
	Harrisburg	6/6/15	
	London BFI	5/8/15	
	Paris Geo	4/2/14	12/31/15
	Peoria RM	5/23/15	
	Phoenix ASC	5/22/15	
	Pittsburgh CSC	5/22/15	
	Regina	3/31/15	8/31/15
	San Jose ER AMC	3/1/15	9/1/15
	Sydney WBS	9/4/14	9/3/15
	Tallahassee CLC	6/6/15	6/30/16
	Victoria DCI	5/29/15	7/6/15
DIA	Hartberg	3/25/15	12/31/15
DinoAliv	Portland OMSI	5/23/14	5/30/16
	Washington NMNH	5/15/15	5/31/16
Dolphins	**Detroit MSC**	**5/1/15**	**8/30/15**
	Speyer Dome		**8/30/15**
DPTP	Baton Rouge LASM	9/12	9/15
	Galveston		9/15
	Killeen	5/12	5/16
	Louisville KSC	6/14	7/16
	Lubbock SS	1/14	12/15
	Sioux Falls	4/14	12/15
Dragons	Guayaquil	5/1/14	12/31/15
DSC	Denver MNS	12/12/14	12/14/15
	Jersey City	1/16/15	1/15/16
	Lehi	1/16/15	1/15/16
	Orlando SC	1/16/15	1/15/16
	Portland OMSI	1/16/15	1/15/16
	Quebec II	1/23/15	1/15/16
	Raleigh	1/16/15	1/15/16
	Saint Augustine	1/16/15	1/15/16
	Virginia Beach AMSC	1/16/15	1/15/16
Everest	Hague	5/8/15	5/9/16
	Hartberg	3/25/15	12/31/15
	Paris Geo	4/7/15	7/3/15
	Spokane RP	4/1/15	9/30/15
FightPil	Chantilly I	12/10/04	7/16
	Corpus Christi Lex	5/12/12	7/16
	Dayton	3/1/13	6/30/16
	Huntsville USSRC	7/1/13	7/1/16
	McMinnville	3/23/12	7/1/16
	Pensacola NAM	6/8/11	7/16
	Seattle PSC 2	**6/14/13**	**6/14/16**
FON	Columbus COSI	8/1/14	7/30/15
	Port of Spain	10/15/14	10/15/15
FOTB	Apple Valley Imx	6/5/15	9/7/15
	Calgary TS	6/28/13	12/31/15
	Chattanooga TA	10/1/12	4/30/16
	Chicago MSI	**2/28/14**	**6/30/16**
	Cincinnati MC	**2/14/13**	**6/30/16**
	Cleveland	**11/27/13**	**6/30/16**
	Columbus COSI	9/1/14	6/30/16
	Davenport Put	**2/15/13**	**6/30/16**
	Edmonton TWS	12/26/13	6/30/16
	Gatineau	**10/5/12**	**6/30/16**
	Hampton VASC	3/29/13	6/30/16
	Hastings	3/17/13	6/30/16
	Houston MNS	10/4/12	12/31/15
	London SM	9/6/13	1/31/16
	Louisville KSC	**9/30/12**	**6/30/16**
	Lucerne	3/14/15	8/1/15
	Melbourne MV	3/21/13	8/31/15
	Memphis Pink	3/1/14	5/23/16
	Mobile	1/14/14	8/31/15
	Norwalk MA	5/22/15	10/7/16
	Nuremberg	11/19/14	11/19/15
	Orlando SC	**3/1/14**	**6/30/16**
	Paris Geo		7/5/15
	Pittsburgh CSC	3/15/13	6/30/16
	Portland OMSI	**1/7/15**	**6/30/16**
	Raleigh	10/19/12	6/30/16
	Richmond SMV	5/1/13	9/30/15
	Sacramento Imx	8/13/13	6/30/16
	Saint Augustine	1/18/13	12/31/15
	Salt Lake City Clark	**2/8/13**	**8/6/16**
	San Antonio 3D AMC	5/15/15	5/14/16
	San Diego RHF	10/12/12	9/30/16
	San Jose Tech	**2/9/13**	**6/30/16**
	Syracuse MOST	**7/4/15**	**6/30/16**
	Taichung NMNS	**7/1/15**	**6/30/16**
	Tallahassee CLC	1/18/13	6/30/16
	Valencia Spn	7/1/15	6/30/16
	Vancouver TWS	6/16/13	6/30/16
	Victoria DCI	4/5/13	6/30/16
	Washington NMNH	10/5/12	1/13/16
Furious7	Raleigh	4/3/15	
G3DNW	**Al Khobar**	**6/1/15**	**6/30/16**
	Apple Valley Imx	10/3/14	4/2/16
	Berlin CS	4/20/14	10/19/15
	Budapest CC	4/24/14	4/23/16
	Copenhagen TBP	**2/8/14**	**2/7/16**
	Davenport Put	10/17/14	10/16/15
	Gatineau	**10/10/14**	**6/30/16**
	Guayaquil	4/20/14	5/4/16
	Hastings	2/10/15	2/14/16
	Hong Kong SM	5/1/15	10/31/15
	Houston MNS	2/15/14	12/31/15
	Katowice CC	6/18/14	9/18/15
	Keelung NMMST	1/1/15	12/31/15
	Koriyama	6/1/15	8/31/15
	Krakow CC	6/18/14	9/18/15
	Kuwait SCK	**10/3/14**	**1/2/16**
	Lodz CC	6/18/14	9/18/15
	Los Angeles CSC	10/1/14	7/2/15
	Louisville KSC	**6/18/15**	**6/17/16**
	Lubbock SS	**11/7/14**	**12/31/15**
	Lucerne	**6/5/14**	**6/4/16**
	Mexico City Pap	3/27/15	3/26/16
	Moscow BFC	10/6/14	10/5/15
	New Orleans	5/22/15	2/1/16
	Nuremberg	10/15/14	10/14/15
	Orlando SC	7/5/14	1/4/16
	Phoenix ASC	12/12/14	7/31/15
	Poznan CC	6/18/14	9/18/15
	Prague CC	5/22/14	5/21/16
	Saint Augustine	4/1/15	3/31/16
	Seoul 63	**4/14/15**	**8/24/15**
	Shanghai Dome STM	12/31/14	12/30/15
	Stockholm	9/30/14	9/11/15
	Tijuana	10/25/14	10/24/15
	Warsaw CC	6/18/14	9/18/15
GC	Grand Canyon DCI	11/1/99	12/15
GCA	Davenport Put	10/3/14	10/2/15
	Gatineau	5/1/13	3/31/16
	Harrisburg	11/1/14	12/31/15
	Mexicali	5/21/15	5/20/16
	Paris Geo	**7/1/14**	**8/30/15**
	Sinsheim	**10/31/09**	**8/30/15**
	Spokane RP	5/1/15	9/7/15
	Syracuse MOST	4/4/15	4/3/16
GF	Victoria DCI	5/15/15	10/31/15
GP	Shanghai Dome STM	8/31/14	8/30/15
GreatApe	Penrith	3/1/15	7/17/15
Greece	Seattle PSC 1	2/15	7/15
GWS	Birmingham AL	2/13/15	2/29/16
	Boston NEA	**5/31/13**	**2/29/16**
	Charlotte DP	5/9/15	5/31/16
	Columbus COSI	6/1/14	8/1/15
	Davenport Put	1/28/15	1/31/16
	Des Moines	6/6/14	12/31/15
	Galveston	6/28/14	12/31/16
	Houston MNS	8/2/13	7/31/15
	Mexicali	**6/26/15**	**3/31/16**
	Peoria RM	7/1/14	7/1/15
	Philadelphia FI	7/1/14	7/1/15
	Phoenix ASC	9/1/14	9/1/15
	Richmond SMV	3/15/14	3/15/16
	Sacramento Imx	2/20/15	2/29/16
	Saint Augustine	8/9/13	9/8/15
	Saint Paul SMM	2/20/15	2/29/16
	Seattle PSC 1	9/19/14	9/19/16
	Singapore SC	11/1/14	10/31/15
	Sioux Falls	1/30/15	6/30/16
	Tallahassee CLC	6/15/13	6/30/16
	Tijuana	8/1/14	8/31/15
	Victoria DCI I	2/13/15	2/29/16
	Virginia Beach AMSC	5/29/14	6/30/16
HCBTD	San Simeon DCI	8/17/96	
HidUniv	**Aguascalientes**	**2/28/14**	**8/30/15**
	Athens Eug	**3/20/15**	**8/30/15**
	Copenhagen TBP	**6/29/13**	**8/30/15**
	Huntsville USSRC	**7/2/13**	**8/30/15**
	London SM	10/18/13	11/29/15
	Memphis Pink	**1/10/15**	**8/30/15**
	Orlando SC	6/13/14	4/2/16
	Paris Geo	10/3/14	10/2/15
	Raleigh	11/7/14	11/6/15
	Saint Augustine	1/5/15	1/4/16
	Salt Lake City Clark	7/18/14	7/17/15
	San Diego RHF	7/4/14	7/3/15
	Valencia Spn	4/1/14	6/30/16
	Vancouver TWS	10/11/14	10/10/15
	Washington NASM	1/30/14	9/17/15

Film	Theater	Open	Close
HOTB	Beijing 3D CSTM	10/15/14	10/15/15
Hubble3D	Washington NASM	1/15	12/15
HumpbWha	Atlanta FMNH	2/13/15	2/12/16
	Atlantic City	2/13/15	2/12/16
	Austin TSHM	2/13/15	2/12/16
	Berlin CS	5/1/15	4/30/16
	Boston MOS	2/13/15	2/12/16
	Boston NEA	2/13/15	2/12/16
	Chattanooga TA	3/6/15	3/6/16
	Chicago MSI	5/29/15	5/28/16
	Cincinnati MC	2/13/15	2/12/16
	Columbus COSI	6/1/15	3/10/16
	Dearborn THF	2/13/15	6/13/16
	Denver MNS	6/5/15	6/4/16
	Detroit MSC	2/13/15	2/12/16
	Fort Lauderdale	2/13/15	2/12/16
	Fort Worth	3/6/15	3/5/16
	Galveston	5/23/15	5/22/16
	Houston MNS	3/13/15	3/12/16
	Jersey City	2/13/15	2/12/16
	Los Angeles CSC	**7/3/15**	**7/2/16**
	Lubbock SS	2/13/15	2/12/16
	Memphis Pink	3/7/15	3/7/16
	New Orleans	3/6/15	3/5/16
	Norwalk MA	2/13/15	5/12/16
	Nuremberg	4/30/15	4/29/16
	Omaha Zoo	3/15/15	2/28/16
	Orlando SC	2/13/15	2/12/16
	Paris Geo	**7/7/15**	**7/6/16**
	Philadelphia FI	**6/20/15**	**6/19/16**
	Port of Spain	3/12/15	3/11/16
	Raleigh	3/20/15	4/23/16
	Richmond SMV	3/14/15	2/12/16
	Saint Augustine	2/13/15	2/12/16
	Saint Louis SC	2/13/15	2/12/16
	Salt Lake City Clark	2/13/15	2/12/16
	San Diego RHF	2/13/15	2/12/16
	San Jose Tech	2/13/15	2/12/16
	Seattle PSC 2	4/27/15	5/15/16
	Sinsheim	5/21/15	5/20/16
	Sydney WBS	4/23/15	4/2/16
	Tallahassee CLC	2/20/15	2/20/16
	Tampa MOSI	2/20/15	9/19/15
	Toronto OSC	5/15/15	5/14/16
	Victoria DCI	6/19/15	6/18/16
IOLM	Fort Lauderdale	10/13/14	
	Raleigh	4/4/14	
	Salt Lake City Clark	**4/4/14**	**4/29/16**
Jerusale	Albuquerque NMMNH	4/11/14	12/31/15
	Birmingham AL	5/23/14	11/23/15
	Boston MOS	9/20/13	9/19/15
	Cincinnati MC	10/10/14	10/9/15
	Columbus COSI	2/11/15	2/10/16
	Copenhagen TBP	12/1/14	11/30/15
	Edmonton TWS	12/26/13	12/31/15
	Harrisburg	10/18/14	9/30/15
	Huntsville USSRC	1/17/15	1/16/16
	Indianapolis Imx	9/19/14	9/18/15
	Kansas City Sci	9/19/14	9/18/15
	Louisville KSC	1/20/14	1/18/16
	Melbourne MV	8/28/14	8/27/15
	Montreal SC	10/10/14	10/9/15
	Philadelphia FI	1/5/15	1/1/16
	Sacramento Imx	9/15/14	10/31/15
	San Jose Tech	3/27/15	6/30/16
	Tallahassee CLC	11/15/14	11/13/15
	Victoria DCI I	8/8/14	7/31/15
JMCSO	Albuquerque NMMNH	5/23/15	5/22/16
	Atlanta FMNH	6/13/15	6/13/16
	Boston NEA	4/16/15	4/16/16
	Cleveland	6/16/15	6/13/16
	Copenhagen TBP	**6/25/15**	**6/25/16**
	Dearborn THF	2/27/15	12/31/15
	Denver MNS	8/14/15	8/14/16
	Galveston	3/6/15	12/31/15
	Houston MNS	5/22/15	5/22/16
	Indianapolis Imx	3/20/15	12/31/15
	Kuwait SCK	**7/17/15**	**1/17/16**
	Lehi	**8/7/15**	**4/7/16**
	Milwaukee	6/12/15	6/12/16
	Montreal SC	4/3/15	9/1/15
	New York AMNH	7/31/15	12/31/15
	Portland OMSI	2/20/15	12/31/15
	Puebla	4/23/15	4/26/16
	Tallahassee CLC	8/14/05	8/14/16
	Virginia Beach AMSC	6/16/15	6/13/16
	Washington NMNH	3/20/15	3/20/16
JTM	Edmonton TWS	12/26/13	6/30/16
	Kuwait SCK	10/11	9/15
	London BFI		1/31/16
	Paris Geo		7/5/15
JTS	Birmingham AL	2/13/15	8/15/15
	Chantilly	**5/1/15**	**5/1/16**
	Chicago MSI	3/19/15	2/16/16
	Copenhagen TBP	3/26/15	8/30/15
	Corpus Christi Lex	**5/22/15**	**5/31/16**
	Davenport Put	**1/31/15**	**2/21/16**
	Dayton	3/6/15	3/5/16
	Denver MNS	**8/14/15**	**8/14/16**
	Des Moines	3/1/15	5/31/16
	Detroit MSC	**6/13/15**	**2/12/16**
	Garza Garcia	6/19/15	11/15/15
	Hampton VASC	2/21/15	2/21/16
	Houston SCH	**3/14/15**	**3/16/16**
	Huntsville USSRC	2/13/15	2/17/16
	Hutchinson	2/20/15	2/16/16
	KSC 1	2/27/15	2/27/16
	Las Palmas	**5/30/15**	**5/30/16**
	Louisville KSC	4/3/15	4/30/16
	Melbourne MV	3/12/15	6/30/16
	Oklahoma City SMO	3/6/15	9/8/15
	Orlando SC	**7/2/15**	**12/31/16**
	Pensacola NAM	4/1/15	3/31/16
	Philadelphia FI	**6/20/15**	**6/20/16**
	Portland OMSI	**3/20/15**	**3/20/16**
	Saint Louis SC	3/13/15	3/16/16
	Saint Paul SMM	2/20/15	8/23/15
	Salt Lake City Clark	**5/22/15**	**5/31/16**
	San Diego RHF	3/27/15	
	Tampa MOSI	5/22/15	5/21/16
	Victoria DCI I	2/13/15	2/13/16
	Washington NASM	3/6/15	
JTTSP	Fort Worth	12/26/14	12/25/15
	Hague	**7/1/14**	**10/8/15**
	Leon Exp	6/1/15	11/30/15
	Norwalk MA	7/1/14	10/8/15
	Omaha Zoo	11/2/14	11/1/15
	Paris Geo	**5/16/14**	**8/30/15**
	Regina	10/3/14	10/2/15
	Saint Augustine	8/1/13	7/31/15
	Shreveport	10/3/14	10/2/15
	Spokane RP	5/24/15	9/30/16
	Stockholm	2/14/14	12/31/15
	Sudbury	4/2/15	9/30/15
Kenya	Lucerne	1/1/15	12/31/15
	Parker	12/7/14	12/31/15
L&C	Columbus COSI	8/1/14	7/30/15
	Richmond SMV	9/1/14	8/31/15
LastReef	Berlin CS	7/5/13	9/30/15
	Hutchinson	10/5/12	9/30/15
	Louisville KSC	2/8/14	6/30/16
	Sioux Falls	1/30/15	6/30/16
	Tallahassee CLC	1/17/14	6/30/16
LivingSe	Hartberg	10/1/13	12/31/15
	Rochester MSC	**7/1/15**	**6/30/16**
LOF	McMinnville	3/23/12	6/15/16
MOF	Pensacola NAM	11/8/96	
	Speyer Dome	**1/1/15**	
MOTN	Alexandria BA	10/1/13	12/31/15
	Lucerne	2/3/15	12/31/15
MOTUW	Birmingham AL	3/1/15	9/1/15
	Charlotte DP	2/8/15	1/31/16
	Cleveland	2/1/15	1/31/16
	Columbus COSI	11/19/14	11/18/15
	Garden City	9/2/14	9/1/15
	Hartford CSC	9/13/14	9/12/15
	Hong Kong SM	12/1/14	8/31/15
	Jersey City	7/4/14	7/3/15
	Leon Exp	12/1/14	11/30/15
	London SM	8/1/14	7/31/15
	Mexico City Pap	11/15/14	
	Milwaukee	10/1/14	
	Peoria RM	1/17/15	1/16/16
	Phoenix ASC	3/13/15	9/7/15
	San Jose Tech	8/30/14	9/1/15
	Tampa MOSI	11/21/14	11/20/15
	Tijuana	2/13/15	2/12/16
	Washington NMNH	9/26/14	9/25/15
MTTM	Guayaquil	4/1/15	3/31/16
Mummies	San Diego RHF	6/1/14	12/31/15
ND	New Delhi ICC		
Niagara	Niagara Can DCI	7/1/86	
	Niagara NY DCI	5/1/07	
OO	Birmingham AL	6/15/15	6/30/16
Ozarks	Branson	9/93	12/15
Penguins	Boston NEA	5/24/13	8/31/15
PTJH	Albuquerque NMMNH	8/29/14	8/28/15
	Apple Valley Imx	2/20/15	2/18/16
	Atlanta FMNH	9/1/14	8/31/15
	Chicago Imx	2/13/15	12/12/16
	Cleveland	11/26/14	11/25/15
	Davenport Put	7/17/14	7/16/15
	Edmonton TWS	9/26/14	9/25/15
	Harrisburg	1/24/15	1/9/16
	Hong Kong SM	11/1/14	10/31/15
	Louisville KSC	7/4/14	7/3/15
	Lucerne	9/18/14	9/17/15
	Montreal SC	12/22/14	12/21/15
	Penrith	9/8/14	9/7/15
	Richmond SMV	8/16/14	8/15/15
	Salt Lake City Clark	10/10/14	10/9/15
	Sudbury	10/9/14	10/8/15
Pulse	Aguascalientes	4/30/15	12/31/15
RATW	Birmingham AL	6/15/15	6/30/16
Rescue	Al Khobar	6/6/13	12/14/15
	McMinnville	**6/1/12**	**12/31/15**
Rheged	Penrith	7/1/00	
RME	Beijing 3D CSTM	6/1/13	
	Birmingham AL	9/12	
	Cincinnati MC	1/1/15	12/31/15
	Dearborn THF	10/2/14	
	Erie	1/20/15	7/31/15
	Gatineau	5/6/13	
	Lucerne	10/4/12	12/31/15
	Melbourne MV	3/26/15	3/26/16
	Omaha Zoo	11/1/13	11/26/15
	Pittsburgh CSC	11/26/14	11/25/16
	Saint Louis SC	6/1/13	
	San Jose Tech	10/1/13	
	Seattle PSC 2	10/14/11	
	Victoria DCI I	6/28/13	
Robots3D	Dallas PMNS	11/21/14	11/20/15
SpacJunk	Al Khobar	1/15/15	1/15/16
	Hastings	9/13/13	
	Hutchinson	10/31/14	10/30/15
TA	Baltimore MSC	4/1/15	6/30/16
	Chicago Imx	9/12/14	9/12/15
	Harrisburg	10/8/14	10/31/15
	Houston MNS	1/1/15	7/31/16
	Memphis Pink	3/8/14	6/30/16
	Portland OMSI	9/24/14	9/30/15
	Sioux Falls	**4/9/14**	**12/31/15**
TinyGian	Albuquerque NMMNH	12/12/14	12/31/15
	Columbus COSI	3/1/15	9/30/15
	Denver MNS	12/12/14	12/31/15
	Houston MNS	1/12/15	12/31/15
	Parker	6/28/15	1/31/16
	Peoria RM	9/1/14	9/1/15
	San Diego NHM	3/20/15	11/30/15
	Singapore DC	**6/1/15**	**1/31/16**
	Sioux Falls	9/1/14	9/1/15
	Tallahassee CLC	12/12/14	12/31/15
ToFly	Washington NASM	7/1/76	
TOTIA	Branson	5/22/15	5/30/16
	Chattanooga TA	10/3/14	10/3/15
	Detroit MSC	9/26/14	9/26/15
	Galveston	11/15/13	12/31/15
	Hague	10/1/14	10/1/15
	Harrisburg	10/18/14	6/30/16
	Hastings	**2/1/13**	**6/30/16**
	Hutchinson	3/1/13	6/30/16
	Kuwait SCK	**11/18/14**	**1/6/16**
	Louisville KSC	11/28/13	6/30/16
	Melbourne MV	6/7/13	3/31/16
	Nuremberg	11/19/14	11/30/15
	Orlando SC	10/4/13	8/31/15
	Pittsburgh CSC	1/1/15	1/31/16
	Saint Félicien	5/1/14	5/31/16
	Sudbury	2/1/15	2/29/16

Film	Theater	Open	Close
TTA	Keelung NMMST	1/1/15	12/31/15
	Lucerne	**5/8/15**	**12/31/15**
	Moscow BFC	8/22/14	8/22/15
	Paris Geo	4/7/15	7/3/15
	Regina	5/18/15	12/31/15
	Sacramento Imx	**10/1/14**	**8/30/15**
	Tallahassee CLC	10/21/14	12/31/15
VanGogh	Paris Geo	4/7/15	7/3/15
	Peoria RM	9/18/14	9/17/15
Vulcania	Vulcania	2/22/02	
WATE	Katoomba	6/1/97	
WM	Harrisburg	10/18/14	7/31/15
	Hastings	**7/3/15**	**12/31/15**
	Seattle PSC 1	5/29/15	5/28/16
	Victoria DCI	5/1/15	7/31/15
WOTA	Beijing CFM	3/1/15	3/1/16
	Erie	10/15/14	10/31/15
	Gatineau	12/19/14	12/31/15
	Hutchinson	8/28/14	8/31/15
WWDPP3D	Albuquerque NMMNH	3/31/15	3/31/16
	Columbus COSI	**9/15/14**	**5/31/16**
	Davenport Put	8/21/14	8/31/15
	Denver MNS	2/13/15	2/29/16
	Edmonton TWS	5/1/15	5/31/16
	Houston MNS	1/1/15	1/1/16
	Jersey City	5/13/15	9/30/15
	Lehi	9/26/14	9/30/15
	Memphis Pink	5/21/15	6/30/16
	Peoria RM	2/1/15	5/31/16
	Philadelphia FI	**7/1/14**	**12/31/15**
	Portland OMSI	8/22/14	8/22/15
	San Diego NHM	12/1/14	12/31/15
	Tallahassee CLC	4/1/15	4/30/16
	Virginia Beach AMSC	**6/30/15**	**6/30/16**
Yell	Yellowstone	5/1/14	12/31/16
ZionCany	Zion	7/1/08	

Summer 2015 by Theater

Theater	Film	Open	Close
Aguascalientes	**HidUniv**	**2/28/14**	**8/30/15**
	Pulse	4/30/15	12/31/15
Al Khobar	**G3DNW**	**6/1/15**	**6/30/16**
	Rescue	6/6/13	12/14/15
	SpacJunk	1/15/15	1/15/16
Albuquerque NMMNH	Jerusale	4/11/14	12/31/15
	JMCSO	5/23/15	5/22/16
	PTJH	8/29/14	8/28/15
	TinyGian	12/12/14	12/31/15
	WWDPP3D	3/31/15	3/31/16
Alexandria BA	CV	10/1/13	12/31/16
	MOTN	10/1/13	12/31/15
Apple Valley Imx	FOTB	6/5/15	9/7/15
	G3DNW	10/3/14	4/2/16
	PTJH	2/20/15	2/18/16
Athens Eug	**HidUniv**	**3/20/15**	**8/30/15**
Atlanta FMNH	HumpbWha	2/13/15	2/12/16
	JMCSO	6/13/15	6/13/16
	PTJH	9/1/14	8/31/15
Atlantic City	HumpbWha	2/13/15	2/12/16
Austin TSHM	HumpbWha	2/13/15	2/12/16
Baltimore MSC	TA	4/1/15	6/30/16
Baton Rouge LASM	DPTP	9/12	9/15
Beijing 3D CSTM	HOTB	10/15/14	10/15/15
	RME	6/1/13	
Beijing CFM	WOTA	3/1/15	3/1/16
Berlin CS	G3DNW	4/20/14	10/19/15
	HumpbWha	5/1/15	4/30/16
	LastReef	7/5/13	9/30/15
Birmingham AL	GWS	2/13/15	2/29/16
	Jerusale	5/23/14	11/23/15
	JTS	2/13/15	8/15/15
	MOTUW	3/1/15	9/1/15
	OO	6/15/15	6/30/16
	RATW	6/15/15	6/30/16
	RME	9/12	
Boston MOS	**Arabia3D**	**7/10/15**	**12/31/15**
	HumpbWha	2/13/15	2/12/16
	Jerusale	9/20/13	9/19/15
Boston NEA	**GWS**	**5/31/13**	**2/29/16**
	HumpbWha	2/13/15	2/12/16
	JMCSO	4/16/15	4/16/16
	Penguins	5/24/13	8/31/15
Branson	Ozarks	9/93	12/15
	TOTIA	5/22/15	5/30/16
Budapest CC	G3DNW	4/24/14	4/23/16
Calgary TS	FOTB	6/28/13	12/31/15
Chandigarh	AIWC	9/5/14	9/4/15
Chantilly	**JTS**	**5/1/15**	**5/1/16**
Chantilly I	FightPil	12/10/04	7/16
Charlotte DP	GWS	5/9/15	5/31/16
	MOTUW	2/8/15	1/31/16
Chattanooga TA	FOTB	10/1/12	4/30/16
	HumpbWha	3/6/15	3/6/16
	TOTIA	10/3/14	10/3/15
Chicago Imx	PTJH	2/13/15	12/12/16
	TA	9/12/14	9/12/15
Chicago MSI	**FOTB**	**2/28/14**	**6/30/16**
	HumpbWha	5/29/15	5/28/16
	JTS	3/19/15	2/16/16
Cincinnati MC	D-Day	5/15/15	
	FOTB	**2/14/13**	**6/30/16**
	HumpbWha	2/13/15	2/12/16
	Jerusale	10/10/14	10/9/15
	RME	1/1/15	12/31/15
Cleveland	D-Day	5/8/15	5/22/16
	FOTB	**11/27/13**	**6/30/16**
	JMCSO	6/16/15	6/13/16
	MOTUW	2/1/15	1/31/16
	PTJH	11/26/14	11/25/15
Columbus COSI	**Bugs**	**9/15/14**	**6/30/16**
	FON	8/1/14	7/30/15
	FOTB	9/1/14	6/30/16
	GWS	6/1/14	8/1/15
	HumpbWha	6/1/15	3/10/16
	Jerusale	2/11/15	2/10/16
	L&C	8/1/14	7/30/15
	MOTUW	11/19/14	11/18/15
	TinyGian	3/1/15	9/30/15
	WWDPP3D	**9/15/14**	**5/31/16**
Copenhagen TBP	**G3DNW**	**2/8/14**	**2/7/16**
	HidUniv	**6/29/13**	**8/30/15**
	Jerusale	12/1/14	11/30/15
	JMCSO	**6/25/15**	**6/25/16**
	JTS	3/26/15	8/30/15
Corpus Christi Lex	FightPil	5/12/12	7/16
	JTS	**5/22/15**	**5/31/16**
Dallas PMNS	Robots3D	11/21/14	11/20/15
Davenport Put	D-Day	5/22/15	
	FOTB	**2/15/13**	**6/30/16**
	G3DNW	10/17/14	10/16/15
	GCA	10/3/14	10/2/15
	GWS	1/28/15	1/31/16
	JTS	**1/31/15**	**2/21/16**
	PTJH	7/17/14	7/16/15
	WWDPP3D	8/21/14	8/31/15
Dayton	FightPil	3/1/13	6/30/16
	JTS	3/6/15	3/5/16
Dearborn THF	D-Day	3/28/14	9/15
	HumpbWha	2/13/15	6/13/16
	JMCSO	2/27/15	12/31/15
	RME	10/2/14	
Denver MNS	DSC	12/12/14	12/14/15
	HumpbWha	6/5/15	6/4/16
	JMCSO	8/14/15	8/14/16
	JTS	**8/14/15**	**8/14/16**
	TinyGian	12/12/14	12/31/15
	WWDPP3D	2/13/15	2/29/16
Des Moines	GWS	6/6/14	12/31/15
	JTS	3/1/15	5/31/16
Detroit MSC	**Dolphins**	**5/1/15**	**8/30/15**
	HumpbWha	2/13/15	2/12/16
	JTS	**6/13/15**	**2/12/16**
	TOTIA	9/26/14	9/26/15
Edmonton TWS	Bugs	12/26/13	6/30/16
	FOTB	12/26/13	6/30/16
	Jerusale	12/26/13	12/31/15
	JTM	12/26/13	6/30/16
	PTJH	9/26/14	9/25/15
	WWDPP3D	5/1/15	5/31/16
Erie	RME	1/20/15	7/31/15
	WOTA	10/15/14	10/31/15
Fort Lauderdale	HumpbWha	2/13/15	2/12/16
	IOLM	10/13/14	
Fort Worth	HumpbWha	3/6/15	3/5/16
	JTTSP	12/26/14	12/25/15
Galveston	DPTP		9/15
	GWS	6/28/14	12/31/16
	HumpbWha	5/23/15	5/22/16
	JMCSO	3/6/15	12/31/15
	TOTIA	11/15/13	12/31/15
Garden City	MOTUW	9/2/14	9/1/15
Garza Garcia	JTS	6/19/15	11/15/15
Gatineau	**FOTB**	**10/5/12**	**6/30/16**
	G3DNW	**10/10/14**	**6/30/16**
	GCA	5/1/13	3/31/16
	RME	5/6/13	
	WOTA	12/19/14	12/31/15
Grand Canyon DCI	GC	11/1/99	12/15
Guayaquil	Dragons	5/1/14	12/31/15
	G3DNW	4/20/14	5/4/16
	MTTM	4/1/15	3/31/16
Hague	D-Day	2/10/15	8/10/15
	Everest	5/8/15	5/9/16
	JTTSP	**7/1/14**	**10/8/15**
	TOTIA	10/1/14	10/1/15
Hampton VASC	FOTB	3/29/13	6/30/16
	JTS	2/21/15	2/21/16
Harrisburg	D-Day	6/6/15	
	GCA	11/1/14	12/31/15
	Jerusale	10/18/14	9/30/15
	PTJH	1/24/15	1/9/16
	TA	10/8/14	10/31/15
	TOTIA	10/18/14	6/30/16
	WM	10/18/14	7/31/15
Hartberg	Amazon	3/25/15	12/31/15
	CRA	3/25/15	12/31/15
	DIA	3/25/15	12/31/15
	Everest	3/25/15	12/31/15
	LivingSe	10/1/13	12/31/15
Hartford CSC	MOTUW	9/13/14	9/12/15
Hastings	FOTB	3/17/13	6/30/16
	G3DNW	2/10/15	2/14/16
	SpacJunk	9/13/13	
	TOTIA	**2/1/13**	**6/30/16**
	WM	**7/3/15**	**12/31/15**
Hong Kong SM	G3DNW	5/1/15	10/31/15
	MOTUW	12/1/14	8/31/15
	PTJH	11/1/14	10/31/15
Houston MNS	FOTB	10/4/12	12/31/15
	G3DNW	2/15/14	12/31/15
	GWS	8/2/13	7/31/15
	HumpbWha	3/13/15	3/12/16
	JMCSO	5/22/15	5/22/16
	TA	1/1/15	7/31/16
	TinyGian	1/12/15	12/31/15
	WWDPP3D	1/1/15	1/1/16
Houston SCH	**JTS**	**3/14/15**	**3/16/16**
Huntsville USSRC	FightPil	7/1/13	7/1/16
	HidUniv	**7/2/13**	**8/30/15**
	Jerusale	1/17/15	1/16/16
	JTS	2/13/15	2/17/16
Hutchinson	AirRacer	1/1/15	12/31/15
	JTS	2/20/15	2/16/16
	LastReef	10/5/12	9/30/15
	SpacJunk	10/31/14	10/30/15
	TOTIA	3/1/13	6/30/16
	WOTA	8/28/14	8/31/15
Indianapolis Imx	Jerusale	9/19/14	9/18/15
	JMCSO	3/20/15	12/31/15
Jersey City	DSC	1/16/15	1/15/16
	HumpbWha	2/13/15	2/12/16

Theater	Film	Open	Close
	MOTUW	7/4/14	7/3/15
	WWDPP3D	5/13/15	9/30/15
Kansas City Sci	Jerusale	9/19/14	9/18/15
Katoomba	WATE	6/1/97	
Katowice CC	AfricAdv	10/4/13	10/3/15
	G3DNW	6/18/14	9/18/15
Keelung NMMST	G3DNW	1/1/15	12/31/15
	TTA	1/1/15	12/31/15
Killeen	DPTP	5/12	5/16
Koriyama	G3DNW	6/1/15	8/31/15
Krakow CC	AfricAdv	10/4/13	10/3/15
	G3DNW	6/18/14	9/18/15
KSC 1	JTS	2/27/15	2/27/16
Kuwait SCK	**G3DNW**	**10/3/14**	**1/2/16**
	JMCSO	**7/17/15**	**1/17/16**
	JTM	10/11	9/15
	TOTIA	**11/18/14**	**1/6/16**
Las Palmas	**JTS**	**5/30/15**	**5/30/16**
Lehi	DSC	1/16/15	1/15/16
	JMCSO	**8/7/15**	**4/7/16**
	WWDPP3D	9/26/14	9/30/15
Leon Exp	JTTSP	6/1/15	11/30/15
	MOTUW	12/1/14	11/30/15
Lodz CC	AfricAdv	10/4/13	10/3/15
	G3DNW	6/18/14	9/18/15
London BFI	Bugs	9/1/14	1/31/16
	D-Day	5/8/15	
	JTM		1/31/16
London SM	FOTB	9/6/13	1/31/16
	HidUniv	10/18/13	11/29/15
	MOTUW	8/1/14	7/31/15
Los Angeles CSC	G3DNW	10/1/14	7/2/15
	HumpbWha	**7/3/15**	**7/2/16**
Louisville KSC	AirRacer	1/1/15	12/31/15
	DPTP	6/14	7/16
	FOTB	**9/30/12**	**6/30/16**
	G3DNW	**6/18/15**	**6/17/16**
	Jerusale	1/20/14	1/18/16
	JTS	4/3/15	4/30/16
	LastReef	2/8/14	6/30/16
	PTJH	7/4/14	7/3/15
	TOTIA	11/28/13	6/30/16
Lubbock SS	DPTP	1/14	12/15
	G3DNW	**11/7/14**	**12/31/15**
	HumpbWha	2/13/15	2/12/16
Lucerne	FOTB	3/14/15	8/1/15
	G3DNW	**6/5/14**	**6/4/16**
	Kenya	1/1/15	12/31/15
	MOTN	2/3/15	12/31/15
	PTJH	9/18/14	9/17/15
	RME	10/4/12	12/31/15
	TTA	**5/8/15**	**12/31/15**
McMinnville	FightPil	3/23/12	7/1/16
	LOF	3/23/12	6/15/16
	Rescue	**6/1/12**	**12/31/15**
Melbourne MV	Bugs	4/10/13	9/30/15
	FOTB	3/21/13	8/31/15
	Jerusale	8/28/14	8/27/15
	JTS	3/12/15	6/30/16
	RME	3/26/15	3/26/16
	TOTIA	6/7/13	3/31/16
Memphis Pink	FOTB	3/1/14	5/23/16
	HidUniv	**1/10/15**	**8/30/15**
	HumpbWha	3/7/15	3/7/16
	TA	3/8/14	6/30/16
	WWDPP3D	5/21/15	6/30/16
Mexicali	GCA	5/21/15	5/20/16
	GWS	**6/26/15**	**3/31/16**
Mexico City Pap	G3DNW	3/27/15	3/26/16
	MOTUW	11/15/14	
Milwaukee	JMCSO	6/12/15	6/12/16
	MOTUW	10/1/14	
Mobile	FOTB	1/14/14	8/31/15
Montreal SC	Jerusale	10/10/14	10/9/15
	JMCSO	4/3/15	9/1/15
	PTJH	12/22/14	12/21/15
Moscow BFC	G3DNW	10/6/14	10/5/15
	TTA	8/22/14	8/22/15
New Delhi ICC	ND		
New Orleans	G3DNW	5/22/15	2/1/16
	HumpbWha	3/6/15	3/5/16
New York AMNH	JMCSO	7/31/15	12/31/15
Niagara Can DCI	Niagara	7/1/86	
Niagara NY DCI	Niagara	5/1/07	
Norwalk MA	FOTB	5/22/15	10/7/16
	HumpbWha	2/13/15	5/12/16
	JTTSP	7/1/14	10/8/15
Nuremberg	FOTB	11/19/14	11/19/15
	G3DNW	10/15/14	10/14/15
	HumpbWha	4/30/15	4/29/16
	TOTIA	11/19/14	11/30/15
Oklahoma City SMO	JTS	3/6/15	9/8/15
Omaha Zoo	HumpbWha	3/15/15	2/28/16
	JTTSP	11/2/14	11/1/15
	RME	11/1/13	11/26/15
Orlando SC	DSC	1/16/15	1/15/16
	FOTB	**3/1/14**	**6/30/16**
	G3DNW	7/5/14	1/4/16
	HidUniv	6/13/14	4/2/16
	HumpbWha	2/13/15	2/12/16
	JTS	**7/2/15**	**12/31/16**
	TOTIA	10/4/13	8/31/15
Oulu	**APE**	**5/2/15**	**11/1/15**
Paris Geo	Bugs	4/7/15	7/5/15
	D-Day	4/2/14	12/31/15
	Everest	4/7/15	7/3/15
	FOTB		7/5/15
	GCA	**7/1/14**	**8/30/15**
	HidUniv	10/3/14	10/2/15
	HumpbWha	**7/7/15**	**7/6/16**
	JTM		7/5/15
	JTTSP	**5/16/14**	**8/30/15**
	TTA	4/7/15	7/3/15
	VanGogh	4/7/15	7/3/15
Parker	Kenya	12/7/14	12/31/15
	TinyGian	6/28/15	1/31/16
Penrith	GreatApe	3/1/15	7/17/15
	PTJH	9/8/14	9/7/15
	Rheged	7/1/00	
Pensacola NAM	FightPil	6/8/11	7/16
	JTS	4/1/15	3/31/16
	MOF	11/8/96	
Peoria RM	D-Day	5/23/15	
	GWS	7/1/14	7/1/15
	MOTUW	1/17/15	1/16/16
	TinyGian	9/1/14	9/1/15
	VanGogh	9/18/14	9/17/15
	WWDPP3D	2/1/15	5/31/16
Philadelphia FI	GWS	7/1/14	7/1/15
	HumpbWha	**6/20/15**	**6/19/16**
	Jerusale	1/5/15	1/1/16
	JTS	**6/20/15**	**6/20/16**
	WWDPP3D	**7/1/14**	**12/31/15**
Phoenix ASC	D-Day	5/22/15	
	G3DNW	12/12/14	7/31/15
	GWS	9/1/14	9/1/15
	MOTUW	3/13/15	9/7/15
Pittsburgh CSC	Animalop	1/1/10	
	D-Day	5/22/15	
	FOTB	3/15/13	6/30/16
	RME	11/26/14	11/25/16
	TOTIA	1/1/15	1/31/16
Port of Spain	FON	10/15/14	10/15/15
	HumpbWha	3/12/15	3/11/16
Portland OMSI	DinoAliv	5/23/14	5/30/16
	DSC	1/16/15	1/15/16
	FOTB	**1/7/15**	**6/30/16**
	JMCSO	2/20/15	12/31/15
	JTS	**3/20/15**	**3/20/16**
	TA	9/24/14	9/30/15
	WWDPP3D	8/22/14	8/22/15
Poznan CC	AfricAdv	10/4/13	10/3/15
	G3DNW	6/18/14	9/18/15
Prague CC	G3DNW	5/22/14	5/21/16
Puebla	JMCSO	4/23/15	4/26/16
Quebec II	DSC	1/23/15	1/15/16
Raleigh	AAOU	5/1/15	
	Bugs	**7/5/14**	**6/30/16**
	DSC	1/16/15	1/15/16
	FOTB	10/19/12	6/30/16
	Furious7	4/3/15	
	HidUniv	11/7/14	11/6/15
	HumpbWha	3/20/15	4/23/16
	IOLM	4/4/14	
Regina	D-Day	3/31/15	8/31/15
	JTTSP	10/3/14	10/2/15
	TTA	5/18/15	12/31/15
Richmond SMV	FOTB	5/1/13	9/30/15
	GWS	3/15/14	3/15/16
	HumpbWha	3/14/15	2/12/16
	L&C	9/1/14	8/31/15
	PTJH	8/16/14	8/15/15
Rochester MSC	**LivingSe**	**7/1/15**	**6/30/16**
Sacramento Imx	**AIWC**		**8/30/15**
	FOTB	8/13/13	6/30/16
	GWS	2/20/15	2/29/16
	Jerusale	9/15/14	10/31/15
	TTA	**10/1/14**	**8/30/15**
Saint Augustine	DSC	1/16/15	1/15/16
	FOTB	1/18/13	12/31/15
	G3DNW	4/1/15	3/31/16
	GWS	8/9/13	9/8/15
	HidUniv	1/5/15	1/4/16
	HumpbWha	2/13/15	2/12/16
	JTTSP	8/1/13	7/31/15
Saint Félicien	TOTIA	5/1/14	5/31/16
Saint Louis SC	HumpbWha	2/13/15	2/12/16
	JTS	3/13/15	3/16/16
	RME	6/1/13	
Saint Paul SMM	GWS	2/20/15	2/29/16
	JTS	2/20/15	8/23/15
Salt Lake City Clark	**FOTB**	**2/8/13**	**8/6/16**
	HidUniv	7/18/14	7/17/15
	HumpbWha	2/13/15	2/12/16
	IOLM	**4/4/14**	**4/29/16**
	JTS	**5/22/15**	**5/31/16**
	PTJH	10/10/14	10/9/15
San Antonio 2D AMC	Alamo		
San Antonio 3D AMC	FOTB	5/15/15	5/14/16
San Diego NHM	TinyGian	3/20/15	11/30/15
	WWDPP3D	12/1/14	12/31/15
San Diego RHF	FOTB	10/12/12	9/30/16
	HidUniv	7/4/14	7/3/15
	HumpbWha	2/13/15	2/12/16
	JTS	3/27/15	
	Mummies	6/1/14	12/31/15
San Jose ER AMC	D-Day	3/1/15	9/1/15
San Jose Tech	**FOTB**	**2/9/13**	**6/30/16**
	HumpbWha	2/13/15	2/12/16
	Jerusale	3/27/15	6/30/16
	MOTUW	8/30/14	9/1/15
	RME	10/1/13	
San Simeon DCI	HCBTD	8/17/96	
Seattle PSC 1	Greece	2/15	7/15
	GWS	9/19/14	9/19/16
	WM	5/29/15	5/28/16
Seattle PSC 2	**FightPil**	**6/14/13**	**6/14/16**
	HumpbWha	4/27/15	5/15/16
	RME	10/14/11	
Seoul 63	**G3DNW**	**4/14/15**	**8/24/15**
Shanghai Dome STM	G3DNW	12/31/14	12/30/15
	GP	8/31/14	8/30/15
Shreveport	JTTSP	10/3/14	10/2/15
Singapore DC	**TinyGian**	**6/1/15**	**1/31/16**
Singapore SC	GWS	11/1/14	10/31/15
Sinsheim	**GCA**	**10/31/09**	**8/30/15**
	HumpbWha	5/21/15	5/20/16
Sioux Falls	DPTP	4/14	12/15
	GWS	1/30/15	6/30/16
	LastReef	1/30/15	6/30/16
	TA	**4/9/14**	**12/31/15**
	TinyGian	9/1/14	9/1/15
Speyer Dome	**Dolphins**		**8/30/15**
	MOF	**1/1/15**	
Spokane RP	Everest	4/1/15	9/30/15
	GCA	5/1/15	9/7/15
	JTTSP	5/24/15	9/30/16
Stockholm	G3DNW	9/30/14	9/11/15
	JTTSP	2/14/14	12/31/15
Sudbury	JTTSP	4/2/15	9/30/15
	PTJH	10/9/14	10/8/15
	TOTIA	2/1/15	2/29/16
Sydney WBS	Bugs	8/6/14	8/6/15
	D-Day	9/4/14	9/3/15
	HumpbWha	4/23/15	4/2/16
Syracuse MOST	**FOTB**	**7/4/15**	**6/30/16**
	GCA	4/4/15	4/3/16
Taichung NMNS	**FOTB**	**7/1/15**	**6/30/16**
Tallahassee CLC	D-Day	6/6/15	6/30/16
	FOTB	1/18/13	6/30/16
	GWS	6/15/13	6/30/16
	HumpbWha	2/20/15	2/20/16

Theater	Film	Open	Close
	Jerusale	11/15/14	11/13/15
	JMCSO	8/14/05	8/14/16
	LastReef	1/17/14	6/30/16
	TinyGian	12/12/14	12/31/15
	TTA	10/21/14	12/31/15
	WWDPP3D	4/1/15	4/30/16
Tampa MOSI	HumpbWha	2/20/15	9/19/15
	JTS	5/22/15	5/21/16
	MOTUW	11/21/14	11/20/15
Thessaloniki	Bugs	10/7/14	10/6/15
Tijuana	G3DNW	10/25/14	10/24/15
	GWS	8/1/14	8/31/15
	MOTUW	2/13/15	2/12/16
Toronto OSC	HumpbWha	5/15/15	5/14/16
Valencia Spn	FOTB	7/1/15	6/30/16
	HidUniv	4/1/14	6/30/16
Vancouver TWS	Bugs	3/11/06	6/30/16
	FOTB	6/16/13	6/30/16
	HidUniv	10/11/14	10/10/15
Victoria DCI	D-Day	5/29/15	7/6/15
	FOTB	4/5/13	6/30/16
	GF	5/15/15	10/31/15
	HumpbWha	6/19/15	6/18/16
	WM	5/1/15	7/31/15
Victoria DCI I	GWS	2/13/15	2/29/16
	Jerusale	8/8/14	7/31/15
	JTS	2/13/15	2/13/16
	RME	6/28/13	
Virginia Beach AMSC	DSC	1/16/15	1/15/16
	GWS	5/29/14	6/30/16
	JMCSO	6/16/15	6/13/16
	WWDPP3D	**6/30/15**	**6/30/16**
Vulcania	Vulcania	2/22/02	
Warsaw CC	AfricAdv	10/4/13	10/3/15
	G3DNW	6/18/14	9/18/15
Washington NASM	HidUniv	1/30/14	9/17/15
	Hubble3D	1/15	12/15
	JTS	3/6/15	
	ToFly	7/1/76	
Washington NMNH	DinoAliv	5/15/15	5/31/16
	FOTB	10/5/12	1/13/16
	JMCSO	3/20/15	3/20/16
	MOTUW	9/26/14	9/25/15
Yellowstone	Yell	5/1/14	12/31/16
Zion	ZionCany	7/1/08	

Key to Film Abbreviations

Film	Title	Year	Dist	
AAOU	Avengers: Age of Ultron, The	2015	3D	WDPD
AfricAdv	African Adventure 3D	2007	3D	nWP
AirRacer	Air Racers 3D: Forces of Flight	2012	3D	3DED
AIWC	Adventures in Wild California	2000		MFF
Alamo	Alamo: The Price of Freedom	1988		MFF
Amazon	Amazon	1997		MFF
Animalop	Animalopolis	2008	3D	K2
APE	Antarctica's Penguin Emperors 3D	2014	3D	K2
Arabia3D	Arabia 3D	2010	3D	MFF
Bugs	Bugs!	2003	3D	SKF
CRA	Coral Reef Adventure	2003		MFF
CV	Cosmic Voyage	1996		IMAX
D-Day	D-Day: Normandy 1944	2014	3D	3DED
DIA	Dream is Alive, The	1985		IMAX
DinoAliv	Dinosaurs Alive	2007	3D	GSF
Dolphins	Dolphins	2000		MFF
DPTP	Dinosaur Passage to Pangaea	2011	3D	CGI
Dragons	Dragons: Real Myths and Unreal Creatures	2013	3D	B&D
DSC	Deepsea Challenge 3D	2015	3D	NGD
Everest	Everest	1998		MFF
FightPil	Fighter Pilot: Operation Red Flag	2004	3D	K2
FON	Forces of Nature	2004		NGD
FOTB	Flight of the Butterflies	2012	3D	SKF
Furious7	Furious 7	2015		UP
G3DNW	Galapagos 3D: Nature's Wonderland	2014	3D	nWP
GC	Grand Canyon: The Hidden Secrets	1985		NGD
GCA	Grand Canyon Adventure: River at Risk 3D	2008	3D	MFF
GF	Gold Fever	1999		SKF
GP	Greatest Places, The	1998		MFF
GreatApe	Great Apes 3D	2014	3D	nWP
Greece	Greece: Secrets of the Past	2006		MFF
GWS	Great White Shark	2013	3D	GSF
HCBTD	Hearst Castle: Building the Dream	1996		NGD
HidUniv	Hidden Universe	2013	3D	MFF
HOTB	Hurricane on the Bayou	2006		MFF
Hubble3D	Hubble 3D	2010	3D	IMAX
HumpbWha	Humpback Whales	2015	3D	MFF
IOLM	Island of Lemurs: Madagascar	2014	3D	IMAX
Jerusale	Jerusalem	2013	3D	NGD
JMCSO	Jean-Michel Cousteau's Secret Ocean	2015	3D	3DED
JTM	Journey to Mecca	2009		SKF
JTS	Journey to Space	2015	3D	K2
JTTSP	Journey to the South Pacific	2013	3D	MFF
Kenya	Kenya 3D: Animal Kingdom	2013	3D	3DED
L&C	Lewis & Clark: Great Journey West	2002		NGD
LastReef	Last Reef, The	2012	3D	GSF
LivingSe	Living Sea, The	1994		MFF
LOF	Legends of Flight	2010	3D	K2
MOF	Magic of Flight, The	1997		MFF
MOTN	Mystery of the Nile	2005		MFF
MOTUW	Mysteries of the Unseen World	2013	3D	NGD
MTTM	Molecules to the Max	2009	3D	SKF
Mummies	Mummies: Secrets of the Pharaohs	2007		GSF
ND	Neelkanth Darshan	2005		unk
Niagara	Niagara: Miracles, Myths, and Magic	1987		NGD
OO	Ocean Oasis	2000		GSF
Ozarks	Ozarks: Legacy and Legend	1993		IMAX
Penguins	Penguins 3D	2013	3D	nWP
PTJH	Pandas: The Journey Home	2014	3D	NGD
Pulse	Pulse: A Stomp Odyssey	2002		GSF
RATW	Ride Around the World	2006		GSF
Rescue	Rescue 3D	2011	3D	K2
Rheged	Rheged: The Lost Kingdom	2000		unk
RME	Rocky Mountain Express	2011		SLC
Robots3D	Robots 3D	2015	3D	NGD
SpacJunk	Space Junk	2012	3D	K2
TA	Tornado Alley	2011	3D	GSF
TinyGian	Tiny Giants 3D	2014	3D	GSF
ToFly	To Fly!	1976		MFF
TOTIA	Titans of the Ice Age	2013	3D	GSF
TTA	To the Arctic	2012	3D	IMAX
VanGogh	Van Gogh: Brush with Genius	2009		MFF
Vulcania	Vulcania	2002		unk
WATE	Wild Australia: The Edge	1997		MSI
WM	Watermelon Magic	2013	3D	B&D
WOTA	Wonders of the Arctic	2014	3D	GSF
WWDPP3D	Walking With Dinosaurs: Prehistoric Planet 3D	2014	3D	GSF
Yell	Yellowstone	1994		NGD
ZionCany	Zion Canyon	1994		K2

Summer 2015 Bookings Count

#	Film	#	Film	#	Film	#	Film
43	HumpbWha	7	TA	2	MOTN	1	HCBTD
40	FOTB	7	TTA	2	Niagara	1	HOTB
35	G3DNW	6	DPTP	2	Rescue	1	Hubble3D
31	JTS	5	AfricAdv	2	VanGogh	1	LOF
23	GWS	5	LastReef	1	AAOU	1	MTTM
20	JMCSO	4	Everest	1	Alamo	1	Mummies
19	Jerusale	4	JTM	1	Amazon	1	ND
18	MOTUW	4	WM	1	Animalop	1	OO
16	D-Day	4	WOTA	1	APE	1	Ozarks
16	PTJH	3	IOLM	1	Arabia3D	1	Penguins
16	TOTIA	3	SpacJunk	1	CRA	1	Pulse
15	HidUniv	2	AirRacer	1	CV	1	RATW
15	WWDPP3D	2	AIWC	1	DIA	1	Rheged
14	RME	2	DinoAliv	1	Dragons	1	Robots3D
12	JTTSP	2	Dolphins	1	Furious7	1	ToFly
10	TinyGian	2	FON	1	GC	1	Vulcania
9	Bugs	2	Kenya	1	GF	1	WATE
9	DSC	2	L&C	1	GP	1	Yell
8	GCA	2	LivingSe	1	GreatApe	1	ZionCany
7	FightPil	2	MOF	1	Greece		

Directory of Organizations Mentioned in this Issue of LF Examiner

Distributors' abbreviations are listed in **bold.**

3D Entertainment Distribution Ltd. **3DED**
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Weybridge, Surrey KT13 8AH UNITED KINGDOM
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Fax: +44 20-7681-2357
www.3DEfilms.com

3D Entertainment Films Ltd.
Ibex House 61-65 Baker Street
Weybridge, Surrey KT13 8AH UNITED KINGDOM
Tel: +44 20-7681-2357
Fax: +44 20-7681-2357
www.3DEfilms.com

Afterglow Studios
527 Marquette Ave. #2500
Minneapolis, MN 55402 USA
www.afterglowstudios.com

AMC Loews Lincoln Square 13 & IMAX
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New York, NY 10023 USA
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Fax: 212-833-6283
www.amctheatres.com/

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AMC Theatres
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Munich, D-80799 GERMANY
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Atlantic Productions
Brook Green House
4 Rowan Road, Hammersmith
London, W6 7DU UNITED KINGDOM
Tel: +44 20 8735 9300
Fax: +44 20 8735 9333
www.atlanticproductions.co.uk

Audubon Nature Institute
PO Box 4327
New Orleans, LA 70178 USA
Tel: 504-565-3020
Fax: 504-565-3010
www.audubooninstitute.org

Bad Robot
1221 Olympic Blvd
Santa Monica, CA 90404 USA
Tel: 310 664 3456
Fax: 310 664 3457
www.badrobot.com/

Barco NV
Noordlaan 5 - Industriezone
Kuurne, B-8520 BELGIUM
Tel: +32 56 36 8211
Fax: +32 56 36 8486
www.edutainment.barco.com

BBC Earth
Media Centre, 201 Wood Lane
2nd Floor, MC2C6
London, W12 7TQ UNITED KINGDOM
http://bbcearth.com/

BIG & Digital **B&D**
2900 Sunridge Heights Pkwy., #1218
Henderson, NV 89052 USA
Tel: 502-212-1559
http://biganddigital.com/

Big Films, Inc. **BFI**
1066 Boucher Crescent
Manotick, ON K4M 1B3 CANADA
Tel: 613-692-9856
Fax: 613-692-9857
www.bigfilms.ca

Blaze Digital Cinema Works
1771 Post Road East, #164
Westport, CT 06880 USA
Tel: 203-292-5745
Fax: 203-404-4998
http://blazedigitalcinema.com/

Carmike Cinemas
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Columbus, GA 31901 USA
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Fax: 706-576-3419
www.carmike.com

Christie Digital Systems USA, Inc.
10550 Camden Drive
Cypress, CA 90630 USA
Tel: 714-236-8610
Fax: 714-229-7128
www.christiedigital.com

Cinema Group, Inc. **CGI**
464 S. Ranch Drive
Alpine, UT 84004 USA
Tel: 801-772-0860

Cinemark Holdings, Inc.
3900 Dallas Parkway South, Suite 500
Plano, TX 75093 USA
Tel: 972-665-1000
www.cinemark.com

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92 Chamale Cove
Slidell, LA 70460 USA
Tel: 985-641-0167
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Columbia Pictures **COL**
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www.sonypictures.com/

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www.dcimovies.com

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www.ensutec.com/

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Fax: 818-841-2130
www.fotokem.com

Foxfire Interactive Corporation
500 East Washington St, Suite 30
North Attleboro, MA 02760 USA
Tel: 508-699-6650
Fax: 508-699-6651
www.foxfireinteractive.com

Giant Screen Cinema Association
624 Holly Springs Road Suite 243
Holly Springs, NC 27540 USA
Tel: 919-346-1123
www.giantscreencinema.com

Giant Screen Films **GSF**
990 Grove St., Suite 200
Evanston, IL 60201 USA
Tel: 847-475-9140
Fax: 847-475-9145
www.gsfilms.com

Helifilms, Ltd. **HFL**
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Melbourne, VIC 8012 AUSTRALIA
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Fax: +61 3 9646 5446
www.helifilms.com/

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Houston, TX 77030-1799 USA
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Fax: 713-523-4125
www.hmns.org

IMAX 3D Theatre Sinsheim
Obere Au 2
Sinsheim, 74889 GERMANY
Tel: +49-7261-92990
Fax: +49-7261-13916
www.technik-museum.de

Imax Corporation **IMAX**
2525 Speakman Drive
Mississauga, ON L5K 1B1 CANADA
Tel: 905-403-6500
Fax: 905-403-6450
www.imax.com

K2 Communications **K2**
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Fax: 310-524-1540
www.k2communications.com/

Kallisti Media
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Beverly Hills, CA 90211 USA
http://kallistimedia.com/

Laser Illuminated Projection Association
3081 Zanker Road
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Fax: 408-577-1301
www.lipainfo.org

Legendary Pictures
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Building 76
Burbank, CA 91522 USA
www.legendarypictures.com

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Santa Monica, CA 90404 USA
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Fax: 310-255-3870
www.lionsgate.com

LucasFilm Ltd.
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San Rafael, CA 94912 USA
Tel: 415-662-1800
Fax: 415-662-2437
www.lucasfilm.com

MacGillivray Freeman Films, Inc. **MFF**
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Laguna Beach, CA 92652 USA
Tel: 949-494-1055
Fax: 949-494-2079
www.macfreefilms.com

Marvel Studios
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Tel: 310-550-3100
www.marvel.com/

Master's Digital, Inc.
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Saanichton, BC V8L 5A7 CANADA
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www.mastersdigital.com/

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www.mgm.com/

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Fax: 514-283-1827
www.montrealsciencecentre.com

Moody Gardens
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Galveston, TX 77554 USA
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www.moodygardens.com

N3D Land Production
10 place du theatre
Sevres, 92310 FRANCE
Tel: + 33-6 88 88 87 78
www.n3dland.com/

National Geographic Studios
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Washington, DC 20036 USA
Tel: 202-857-7665
Fax: 202-775-6517
http://movies.nationalgeographic.com/movies/

National Geographic Studios Distribution **NGD**
161 6th Avenue, 15th Floor
New York, NY 10013 USA
Tel: 212-224-8468
Fax: 212-741-0374
http://movies.nationalgeographic.com/movies/

Necsel/Ushio
2826 Sycamore Way
Santa Clara, CA 95051 USA

No Final Frontier Productions, LLC
Fairfax, VA USA
www.lightspeedpioneers.com/

Novo Cinemas
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https://novocinemas.com

Directory, cont'd

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www.nwave.com

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Hollywood, CA 90038-3197 USA
Tel: 323-956-5000
www.paramount.com

Power Technology, Inc.
16302 Alexander Rd.
Alexander, AR 72002 USA
Tel: 501-407-0712
www.powertechnology.com/

Primesco Communications, Inc. **PCI**
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Montreal, QC H3Z 1E3 CANADA
Tel: 514-874-9551
Fax: 514-874-9068
www.primesco.com/medias/unf.htm

Regal Entertainment Group
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Knoxville, TN 37918 USA
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Fax: 865-922-3188
www.regalcinemas.com

Rough Cut Pictures, Ltd.
London, UNITED KINGDOM
http://roughcutpictures.co.uk/

RPG Productions, Inc.
632 South Glenwood Place
Burbank, CA 91505 USA
Tel: 818-848-0240
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www.rpgproductions.com/

Sarai, Inc. **SAR**
Urban Shibakoen 4th Fl
3-1-13 Shibakoen, Minato-Ku
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Fax: +81-3-5777-5207
www.sarai-inc.com/

Science Museum of Virginia
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Fax: 804-367-9348
www.smv.org

Science North **SN**
100 Ramsey Lake Rd.
Sudbury, ON P3E 5S9 CANADA
Tel: 705-522-3701
Fax: 705-522-4954
www.sciencenorth.ca

SimEx/Iwerks
511 King Street West, Suite 130
Toronto, ON M5V 1K4 CANADA
Tel: 416-597-1585
Fax: 416-597-0352
www.simex-iwerks.com

SK Films, Inc. **SKF**
Pinewood Toronto Studios
225 Commissioners Street, Suite 303
Toronto, ON M4M 0A1 CANADA
Tel: 416-367-0440
Fax: 647-837-3350
www.skfilms.ca

Sony Pictures Classics, Large Format **SPC**
550 Madison Avenue, 8th Floor
New York, NY 10022 USA
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Fax: 212-833-8570
www.sonyclassicslgf.com

Sony Pictures Entertainment **SPE**
10202 West Washington Blvd
Culver City, CA 90232-3195 USA
Tel: 310-244-4000

Stephen Low Company
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www.stephenlow.com

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4836-D Tower Road
Greensboro, NC 27410 USA
Tel: 336-202-4777
www.sv2studios.com/

TCL Multimedia Technology
9 Floor, TCL Multimedia Building
1001 Zhongshan Park Road Nanshan District
Shenzhen, Guangdong CHINA
http://multimedia.tcl.com

Tech Museum of Innovation
201 South Market Street
San Jose, CA 95113-2008 USA
Tel: 408-294-8324
Fax: 408-279-7167
www.thetech.org

Tennessee Aquarium
201 Chestnut Street
Chattanooga, TN 37401 USA
Tel: 423-266-4629
Fax: 423-267-3561
www.tennis.org

TEQ4
20 Boulevard House
32 Regent Street
Brighton, BN1 1UU UNITED KINGDOM
Tel: +44 1273 667 997
http://uk.linkedin.com/in/martinteq4/

Twentieth Century Fox **FOX**
10201 W. Pico Blvd.
Los Angeles, CA 90035 USA
Tel: 310-369-3423
www.foxmovies.com

Universal Pictures **UP**
100 Universal City Plaza
Universal City, CA 91608 USA
Tel: 818-777-1000
Fax: 818-622-0407
www.universalstudios.com

Walt Disney Studios Motion Pictures **WDPD**
350 S. Buena Vista Street
Burbank, CA 91521-1232 USA
Tel: 818-560-6200
www.disney.go.com

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SHORTS

Imax in Vienna Opera for *MI5*

Imax Corporation temporarily installed an IMAX digital projection system in Austria's **Vienna State Opera** house for the world premiere of ***Mission: Impossible–Rogue Nation*** on July 23. Over the course of three days, a 37x56-foot (11x17-meter) screen, a first-gen IMAX digital projection system, and a custom sound system were installed in the 2,100-seat theater.

The red-carpet event was attended by director **Christopher McQuarrie**, cast members **Tom Cruise**, **Simon Pegg**, and **Rebecca Ferguson**, and Imax CEO **Richard Gelfond**.

Mission: Impossible–Rogue Nation was produced by **Bad Robot** and distributed by **Paramount Pictures** and opens worldwide on July 31.

Vienna's State Opera got an IMAX system for the Mission: Impossible *premiere.*

Expedia sponsors MFF's National Parks film

Expedia, Inc., has signed on as the first global sponsor for **MacGillivray Freeman Films**' ***America Wild: A National Parks Adventure***. The online travel company will provide worldwide marketing support to domestic and international theaters that book the film, which opens on Feb. 12, 2016, to coincide with the centennial of the U.S. National Parks.

Directed by **Greg MacGillivray**, the film has been filmed in 15/70 3D in Yosemite, the Everglades, Yellowstone, and other national parks. The seven members of the **Giant Dome Theater Consortium** are also supporting the film, and have committed to showing it.

News on IMAX DMR releases

Imax Corporation has announced that two fall DMR films will open in IMAX theaters ahead of their general releases. ***Everest 3D***, based on the fateful events on the mountain in spring 1996, will open in IMAX on Sept. 18, a week ahead of its wide opening on Sept. 25. And **Robert Zemeckis**'s ***The Walk***, about **Philippe Petit**'s 1974 high-wire walk between the towers of the World Trade Center, will open in IMAX on Sept. 30, more than a week in advance of its Oct. 9 opening.

The company also announced the addition of ***The Transporter Refueled*** to its fall slate, opening on Sept. 4. The film is produced by **Luc Besson**, whose film adaptation of the graphic novel ***Valerian*** will be released to IMAX theaters in July 2017.

At a recent presentation to investors, Imax's **Greg Foster** said that, following the successful release of episodes of HBO's ***Game of Thrones*** to IMAX theaters earlier this year (*see Shorts, January and February 2015*), he was working to arrange a similar deal with the **AMC Network** for ***Walking Dead***, a TV series about a zombie apocalypse.

Ice Age 4D from Simex-Iwerks

Simex-Iwerks has released a new 4D experience based on the characters from **Twentieth Century Fox**'s popular *Ice Age* animated films. Adapted from an Oscar-nominated short, *Ice Age 4D, No Time for Nuts* includes new scenes to "maximize in-theater special effects," according to a press release. It is currently showing in locations in New York City and Mystic, CT, and will open this summer in San Diego, CA; Pittsburgh, PA; and three international locations in the U.K., Italy, and China.

The show is accompanied by learning guides for grades K–3 and 4–6 that adhere to the Common Core standards.

Imax's "Palais" in-home system

In June, **Imax Corporation** announced the launch of its second home theater system, IMAX Private Theatre "Palais," developed in a joint venture with Chinese electronics maker **TCL Multimedia Technology** Holdings, and aimed primarily at upscale Chinese consumers.

According to a press release, in addition to including IMAX projection and sound technology, Palais is "the very first completely turn-key home theatre system from a single source. Features include sound isolation, acoustics, wall treatments, flooring, lighting, seating, and audio-visual content provided by Imax."

Robert Lister, Imax's chief business development officer, is quoted as saying that "The brand-new system takes key components of the IMAX Experience that we have been delivering to cinema audiences for almost 50 years and, for the first time, transports them into a home environment."

Imax Corporation

The companies have set up a showroom at **Le Royal Méridien** hotel in Shanghai, "where the luxury system will be available for demonstration to qualified consumers on a by-appointment basis."

This is the second in-home system Imax has offered. The first, known simply as IMAX Private Theater, was announced in 2013, and has reportedly been installed in several homes in the U.S., at a reported price of over $2 million, not including the cost of constructing and decorating the room. (In contrast, Imax's new 4K laser system reportedly costs theaters about $1.5 million.)

Although no specs or prices have been reported for the new Palais system, early reports put its price tag at "only" $250,000.